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ORIGINAL ARTICLES.

A CONTRIBUTION TO THE STUDY OF THE TREATMENT OF GALL STONE.

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The surgery of the gall bladder and gall ducts includes:

1. Diagnosis of irritation caused by the presence of calculi in the gall bladder or in the ducts.
2. Diagnosis of gall bladder obstruction, or of gall duct obstruction.
3. Removal of stones from gall bladder and ducts.
4. Drainage of gall bladder.
5. Removal of gall bladder.
6. Anastomosis of gall bladder and intestine.
7. Drainage of sub-hepatic region, following pus operations, the opening of the common duct or accidents and injuries in this region.

Especial attention will be paid to diagnosis of the existing condition, the anatomy of the parts concerned in the incision and the technique of drainage, as these are points upon which discussion will be of most value and at which there is most room for improvement.

Diagnosis.—The irritative lesions of the gall bladder are probably due to the mechanical presence of calculi in the bladder. It is possible, however, that the cause of the stone formation, whatever that is, may be the irritative cause, and may be responsible for the symptoms that follow. There are two recognized theories as to the cause of calculus. One, that the colesterin is precipitated from the bile by some chemical change on the part of the bile; the other, that some inflammatory condition of the mucous membrane of liver ducts, common duct and gall bladder is responsible.

Now, it may be that the reflex gastric symptoms and the dull, aching pain and the radiating pain and the intestinal gas formation and the other symptoms of gall stones may be caused by the catarrhal condition of the bile passage instead of by the mechanical irritation of the stone; or, if the other theory be correct, by the same nervous influence that is responsible for the altered chemical condition of the bile. Whichever is correct, the fact remains that this train

of symptoms accompanies gall stone formation, and it is generally believed that the mechanical irritation produced by the presence of the stones is responsible for the symptoms described.

The symptoms of the presence of gall stones are given by Ochsner* as follows:

1. Digestive disturbances, a feeling of weight or burning in the vicinity of the stomach after eating, gaseous distension of abdomen.

2. A dull pain extending from the epigastric region around the right side about the level of the tenth rib, passing to a point near the spine and progressing upward under the right shoulder blade.

3. A point of tenderness on pressure between the costal cartilage of the ninth rib on the right and the umbilicus.

4. A history of having had one or more attacks of appendicitis or typhoid fever.

5. In many of these cases there is a slight tinge of yellow in the skin, not sufficient to be recognized as icterus, but still sufficient to be perceptible upon close inspection, especially on the days on which the patient is not feeling very well, when she complains of feeling "bilious."

6. There is usually an increase in the area of liver dullness.

7. There may be swelling of variable size opposite the end of the ninth rib.

I have applied the name irritative symptoms to the group that includes numbers 1, 2, 3 and 5, possibly 6, while to number 7 and to the symptoms of cramping pain, severe jaundice and vomiting, with rigidity of muscles, I would apply the term obstructive symptoms.

The obstructive symptoms have in the past been considered as the entire symptom complex of gall stone disease. This is incorrect. The foregoing symptoms of irritative lesion must be considered. Ochsner found that of all his cases operated upon in 1901, less than half had distinct biliary colic. Also that about 80 per cent. had dyspepsia, and most of them had been treated for gastritis, that only a small portion ever had jaundice and in more than one-half no jaundice occurred. Only a few had passed gall stones in the feces. I have found similar conditions in my experience. Moreover, in the years from 1892 to 1897 I was in charge of the anatomical room of the Kansas City Medical College. An average of about twenty-five cadavers per year came under my observation, and always were several found to have gall stones. The diagnosis had not been made. A physician or surgeon depending upon the three classic symptoms of hepatic colic, jaundice and calculi in the feces for diagnosis will certainly fail to recognize more than one-half of his cases of hepatic calculi. This fact has been noted by numerous writers in the past two years, and was especially prominent in the papers and discussion of the American Medical Association of 1903 at New Orleans. Moreover, it is only when such complications exist that the death rate in operation for gall stones, in the hands of competent surgeons, appears. The cases that die, with or without operation, are the cases that have obstruction and inflammatory symptoms.

*Ochsner Clinical Surgery, page 136.

The irritative symptoms must be differentiated from dyspepsia in its various forms, anacidity, hyperacidity and fermentation in stomach. One of the best evidences of the hepatic origin of these conditions is their chronicity, their tendency to return. A lady came to me last month with such a history. She belched large quantities of gas, her stomach bloated after meals, she had much distress after eating, pies and fat meat were especially obnoxious to her. She had had this condition many years. Medicine helped her, but did not cure her. I told her her condition was due to gall stones, but she said, "Oh! no! I am subject *to these stomach spells;* my father had them." How many patients do we all know who are "subject to stomach troubles" or to "spells with their stomach?" It is probable that a great majority of them will, if questioned and examined, give a history and symptom list of gall stones. I removed ninety two calculi from my patient of last month, and now she will no longer be subject to her "spells" nor to the ghost of her father's unrecognized calculi.

The symptoms of obstruction are of two classes, according as they are due to stone in the hepatic, or common duct, or the bladder and cystic duct. In the hepatic, or common duct, the liver enlarges, the bile is apparent in the urine, severe jaundice follows acute, cramping pain and the stools show lack of biliary coloring. Chills and hepatic cholangitis are apt to occur. In stone in the cystic duct, or the outlet of the bladder, there is not jaundice, but a distended bladder, and the cramping pain is severe. The obstructive symptoms must be differentiated from cancer in this region; we should not forget the frequent prevalence of both these conditions simultaneously. Cancer and gall stones are often found together.

Anatomy of Rectus and of the External Oblique and Internal Oblique Muscles.—A study of the anatomy will show that we may cut vertically through the outer border of the right rectus muscle or the linea semilunaris and accomplish the following:

1. The great external oblique will not be divided nor, indeed, will any of the abdominal muscles.

2. The tension of muscles will not pull the incision open.

3. Respiration will not interfere with approximation of cut edges.

4. We come directly to the fundus of the bladder.

In enlarging the incision to obtain further room we may extend the upper extremity of the incision to the left or inward and divide only the weaker fibres of the rectus abdominalis, thus preserving the integrity of this splendid and useful muscle. We may extend the lower end of the incision outward (to the right) and not cripple the external oblique and divide the other two in the course of their fibres.

This incision is the most logical and at the same time quite advantageous in giving room for work. I have abandoned the Kocher incision for this one.

Kocher's incision is good in all cases, but has the disadvantage that respiration tends to pull the wound open, and healing is thereby retarded. It is made along the rib

margin on the right side. The best incision is in the outer border of right rectus muscle or in the linea semilunaris. This to be enlarged by carrying the top of the incision to the right and the bottom to the left, making an S shaped incision.

Further space is gained by an assistant lifting the rib margin—eviscerating the liver. Further space is gained by an assistant retracting strongly the rectus muscles, stomach and structures on the left of incision. Further space is gained by placing a sand bag under the patient's back, bending the patient backwards. And, lastly, further space is gained by placing the patient in reversed Trendelenburg, *i. e.*, raising shoulders and lowering feet. The patient is secured by straps under the arms. The body is raised twenty-five or even thirty-five degrees. The intestines fall away, air enters, and with the above retractors in place the work upon the ducts becomes more simple and vastly easier of execution and more certain of success.

The contraindications to operation are the usual surgical conditions that prevent operative interference plus the factor of severe jaundice. Severe jaundice marks a hemorrhagic diathesis, and many patients so afflicted will bleed to death from small wounds.

*"Mayo Robson gives calcium chlorid, thirty-grain doses, to deeply jaundiced patients for a time before operation to make the blood more plastic and to lessen the tendency to bleeding."

Removal of Stones from Common Duct (choledochotomy) *and from the Gall Bladder* (cholocystotomy).—The incision is made as described in a previous paragraph, retraction and position as also described. The finger searches the bladder, feeling through its walls for calculi. When present they feel much like the boy's marble sack, the stones moving over one another if loose, and giving a nodular feel if tightly packed. When the gall bladder can be brought up to the wound it is anchored to the incision. Gauze pads protect the intestine and wall off the field of operation. The bladder is emptied of bile and calculi. The ducts are next examined. We reach the foramen of Winslow, and find the duct and the hepatic artery and portal veins forming its anterior border (superior border, with patient reclining). The duct must be palpated to its extremity—the duodenum. If no stones be found the field is cleaned, sponges removed and peritoneum closed snugly with fine catgut the full length of the incision and surrounding the anchored open bladder. This leaves the gall bladder opening into the bottom of a funnel-shaped cavity, the external wound may be partly closed. A rubber drain is fastened by a stitch in the open gall bladder and gauze packed about it. The discharge of bile should be excessive. The tube should be removed in three to five days. The fistula should discharge for four weeks to several months, closing when the ducts are open and in a healthy condition.

If stone be found in the duct, the procedure is more complicated. The usual site for such stone is about one-half way to the duodenum from the

*Warren Gould, Int. Text Book Surgery, Vol. II, page 440.

gall bladder. Special care must be used, following directions given above as to incision, position and retraction. The duct should then be strongly pulled forward and outwards toward the surface of the abdomen and made to present in reach of the operator; the duct is incised over the stone, and it slips out. A drain is now placed in position. I am satisfied with a gauze wick wrapped in gutta percha tissue, and brought out of the wound. This should be stitched to the duct over the opening with fine catgut. Fenger advised a rubber tube down to the wound in the duct and two gauze drains inserted, one above the rubber tube and one below it. The Mayo brothers use a rubber tube inserted into the opening of the tube and gauze wrapped about it, after the manner of Abbe, of Mew York, both are stitched to the duct to prevent slipping; should the patient vomit, Ochsner advises a "glass tube wrapped in iodoform gauze in the pouch under the liver to drain this space, which is so likely to be infected." He also uses the rubber tube in the duct. All agree if much leakage has occurred, or is likely to occur, during healing that the abdominal wall should be perforated below the right kidney, and drainage made here also, as first practiced by Morrison.

Removal of Gall Bladder (cholecystectomy).—When the gall bladder has been crippled by long continued suppuration and the walls have undergone extensive inflammatory changes, it may be better to remove it entire than to drain it, as has been described. Mayo Robson gives nine indications for cholecystomy in his book on gall stones and their treatment:

"1. In bullet wound, or other wound of the gall bladder where suture is impracticable.

2. In phlegmonous cholecystitis.

3. In gangrene of the gall bladder.

4. In multiple or in perforating ulcers.

5. In chronic cholecystitis from gall stones, where the gall bladder is shrunken and too small to safely drain, and where the common duct is free from obstruction.

6. In mucous fistula due to stricture of the cystic duct.

7. In hydrops of the gall bladder due to stricture of the cystic duct; as also in certain cases where the gall bladder is very much dilated.

8. In certain cases of empyema, where the walls of the gall bladder are very seriously damaged.

9. In cancer of the gall bladder."

Removal is done as follows: Divide the serous covering of the cystic duct and the superficial layer of tissue under it; dissect the mucous membrane out down into the cystic duct opening; ligate and cut away the mucous lining as far outward as the first line of incision; sew the peritoneal flaps over the stump of the cystic duct; dissect out the gall bladder, closing the peritoneal scar.

Anastomosis of Gall Bladder and Intestine (cholecystenterostomy).—When, from stenosis or closure of the cystic, or common duct, the bile can no longer be discharged per vias naturalis, an anastomosis should be made between the gall bladder and intestine. The most desirable portion of the gut for this procedure is the upper portion of the jejunum or, better still, the duodenum. The anastomosis may be made by sewing by the

bodkin of Robson, by the elastic ligature of McGraw or by Murphy's button of suitable size. The last is the accepted procedure. It can be done most quickly, shows the lowest mortality rate and gives the best after-results. Murphy gives the following indications for this operation:

1. Obstruction to the common duct.
2. Obstruction to the cystic duct, where cholecystectomy is impracticable.
3. Chronic cholecystitis, with thickening of the walls of the gall bladder.
4. Fistula through the skin, where the patient is emaciating from the loss of bile.
5. Carcinoma of duct in early stage.

In operating for this form of anastomosis, the gall bladder and intestine that are to be united are delivered from the abdomen, and are cleaned of their contents by stripping. They are held up in place and kept closed by a second assistant or helper, who stands at the right of the assistant or at the left of the operator. Soft intestinal clamps, rubber covered or gauze covered, may be used to keep back the contents. The field of operation must be well protected by gauze sponge packing. The lighter portion of the button should be inserted in the gall bladder—the heavier in the intestine. The opening in each should be but just large enough to admit the button. The usual purse string suture is inserted and the operation completed exactly as described in all text books for Murphy button anastomosis. Particular attention should be paid to the relation of the parts after they are united and dropped back in place, that there may be as little of strain or tension as possible, and the point of incision chosen accordingly. There is practically no foundation for the expressed fear of liver infection from the bowel.

Special Considerations.

Diagnosis.—The points of gastric disturbances, tenderness and pain which I have referred to as "irritative symptoms" should be given greater prominence than is customary.

Drainage.—Instead of suture of the ducts when calculus is removed, more care should be had with drainage. This is of four kinds:

1. Rubber tube drainage into the duct if necessary.
2. Glass wick drainage surrounding by Cargyle membrane or by gutta percha tissue, which should be fastened by fine catgut (three to five days duration) to the peritoneum over the incision of the duct.
3. Glass tube drainage surrounded by gauze into the pouch under the liver.

All of these to lead out of the abdominal wound in front and to be removed in four to six days.

4. "Stabbs' drainage," *i. e.*, perforation of the abdominal wall below or at the outer side of the kidney and the insertion of one of the above described drains, my preference being No. 2. This to be removed in three to four days and left out, or rubber substituted if pus is present and irrigation needed.

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THE INTERNAL ADMINISTRATION OF ADRENALIN CHLORIDE IN THE VARIOUS TOXAEMIAE.

By John K. Broderick, A. M., M. D., of St. Louis.

As a result of many experiments my investigations led me to believe that adrenalin chloride was indicated in the treatment of toxic fevers and kindred diseases due to the various toxines and infections. The experiments themselves being rather fragmentary and in incomplete form, I do not feel at liberty to recount them at the present writing nor present the theories I have evolved about them. Hence I claim the attention of the profession for a most preliminary paper on the important topic of the administration of adrenal extract in the various toxaemiae feeling justified that the amount of good that can be done and the large share of suffering which can be spared humanity a sufficient guarantee for making known at this time my ideas and conclusions concerning adrenal therapy.

The first eight or ten cases in which I began the internal administration of adrenalin for the various ills convalesced so rapidly that I decided there had not been very much the matter with them, and was inclined not to pay any attention to the matter. It was not until the following case, which presented all the characteristics of pneumonia, came under my notice that I decided to give adrenalin another chance.

Case 1.—Mrs. K., aet. thirty-three, called me on November 15, 1903. She had been suffering some time with "a cold," and when I first saw her was in bed complaining of "soreness" in both lungs, which "began with a sharp pain in both sides." Patient was frightened because her sputum was slightly streaked with blood. No distinct history of rigor could be elicited, though patient felt cold and was warmly wrapped up in bed when first seen. Temp., 101.2; pulse, 108; resp., 21 per minute. Physical examination showed slight dullness in the base of both lungs and a few crepitant rales could be heard upon auscultation. Herpes labialis present. A mixture containing fifteen drops to the dose of adrenalin was ordered to be taken every hour; in addition, plaintiff's chest was tightly wrapped in cotton saturated with whiskey. Patient was seen again the next day, condition about the same, except no rales were heard, dullness barely distinguishable. Temperature had gone down to 99.3, pulse 96; headache had left her, also pain in the side; slept better than she had for a long time. Urine examined, negative; no change in chlorides appreciable. On 17th patient's condition was so improved that I did not call again until the 20th, upon which date I found her sitting up and tending to her duties. Her appetite had picked up suddenly, and she begged to be permitted to go out calling, which was denied.

Case 2.—On February 13th, I was called to see a patient whom I had known to be in poor health for several weeks previous. He had had a chill shortly before noon, the effects of which he endeavored to combat

with a generous amount of whiskey. He had the good sense, however, to take to bed, where I first saw him at 10 P. M. of the same day. At that time he was somewhat stupified by the whiskey he had imbibed, but was still keenly alive to the pain in his right thorax just below the nipple. His breathing seemed to worry him greatly and he complained of "feeling feverish." Temp., 101.3; pulse, 116; resp., 22. Physical examination: respiration rapid, shallow and guarded; no difference noted in either thorax upon inspection. Percussion revealed slight dullness in middle lobe of right lung, midway between mammary and axillary line. Area of dullness considerably larger than a silver dollar covering sixth and seventh interspace. Upon auscultation crepitant rales were heard at this point at the end of inspiration. There was no expectoration and only a slight cough, though patient said he had a sensation as though he wished to cough up something. I gave him a solution containing fifteen minims of adrenalin chloride to the teaspoonful, which he was directed to take every hour. Upon calling again about ten the next morning his distress was very much relieved. Temp., 99.8; pulse, 101; resp., 19. The area in which the crepitant rales had been heard was now reduced to the size of a quarter. Called again the same evening after ordering the dosage to be continued; this time found patient sitting up; rales had disappeared entirely, likewise the dullness. Temp., 99; pulse, 96; res., 18. Convalescence by lysis.

In the interval between these two foregoing cases, I had occasion to treat some seven or eight cases of la grippe, the greater number of which presented rather severe bronchial symptoms. I administered adrenalin as the only therapeutic agent in each and every one of these cases, with the result that all but two were able to leave their beds the day following the installation of treatment. Of the other two cases, the time required for recovery was three and five days respectively. The history of the last mentioned case is herewith given, the others having run such a light course no records were kept. What I wished to call attention to in this connection is not so much the rapidity with which adrenalin acts, but not one of the cases of influenza thus treated was followed by any complications, despite the disposition the disease this year assumed of causing pneumonia.

Case 3.—Miss M., aet. twenty-two, presented herself for treatment on February 17th. As I had been brought in contact with the patient for two weeks before and noted her daily failing condition, I was not surprised when she called at my office with a fever of 102.4. Patient gave a history of typhoid some four months previous, from the effects of which she had never fully recovered. She had been in bed six weeks at that time, and when I saw her was extremely anaemic—cheeks and lips very pale, no appetite, digestion poor, sleep disturbed. Complained of pains in back and chest; had headache, constipation and "cold in the head." A diagnosis of grippe bronchitis was made and patient placed on adrenalin every hour; the bowels were regulated with apenta water. The bronchial symptoms disappeared on the morning of

the third day of treatment; appetite came back and the fever, which had been ranging between 101.4 to 101.7, now dropped to 99. Still patient showed no disposition toward getting out of bed, felt too weak. Upon inquiry found that she had been eating nothing but sweetmeats; in addition, her hygienic surroundings were very poor. A more substantial diet was ordered and better regime instituted. Adrenalin was now given every two hours in somewhat smaller dosage. At the end of the week she was attending to her duties. Her color returned to her cheeks rapidly, her eyes lost their listlessness and her activity and interest greatly increased with an unbounded appetite. Within ten days after resuming her duties she said: "Doctor, my appetite has become something awful; I eat so much I can hardly get up from the table."

Case 4.—Mrs. B., æt. fifty-eight. Afflicted for years with hoarseness, especially in winter; had been to Vienna twice for treatment. Dr. Miller, who treated her there, claimed her hoarseness was due to a thin film which would persist in growing over her vocal chords, upon removal of said film she would be able to speak clearly. But the hoarseness would return again within a day. Gave patient a solution of adrenalin which she was directed to gargle before swallowing. The day following inauguration of treatment hoarseness was greatly relieved. For some unknown reason medicine was discontinued and her troubles returned. Upon resuming the treatment carefully patient was entirely freed from her affliction until she left the city.

Cases 5 and 6.—Mr. S. came into my office on the afternoon of the 26th of January suffering with tonsilitis. He had been driving a wagon for the past week in cold, wet weather. Temperature, 100.9°; pulse, 104. I prescribed adrenalin in ten-drop doses, to be retained in back part of throat a few seconds before swallowing. The next morning I was hurriedly called to his wife and found her in a fever of 103.2°; pulse, 122. She had been applying heat about her neck, as the pain in her throat was intense. Examination revealed a follicular tonsilitis. She was ordered the same dosage as her husband hourly, and in addition thereto an ice pack was applied about the neck. The same evening her temperature fell to 99°. When seen again the next day she had already resumed her duties. The husband's case ran a light course.

Though the crisis in tonsilitis is usually on the third or fourth day, still it may occur earlier. However, my experience with adrenalin in these cases being unfailingly the same, I feel it has a special therapeutic value as all the records of tonsilitis I have kept thus treated pass the crisis within the first twenty-four hours after treatment is instituted, as is witnessed in the following instance.

Case 7.—Was called in the evening to see Mr. C., a young student, twenty-two years of age. Fever, 102.8; pulse, 124. He had been taken ill that morning with a severe chill and pain in his right tonsil. Examination showed angry-looking follicles on the right tonsil. A mixture, containing fifteen drops to the dose of adrenalin chloride, which patient was directed to partially gargle before swallowing was prescribed, to be

taken hourly. Upon my arrival early the next morning patient greeted me by saying that he had not slept so soundly since a child, and wanted to know if I had given him morphine. I was surprised to find both temperature and pulse normal. Upon examining the tonsils I found that the follicles had entirely disappeared. Patient claimed that he fell asleep about 9 o'clock, and although a card game was in progress in his room until after midnight, he did not hear a sound until he awoke about seven in the morning. The next day patient resumed his duties at school against my orders without any ill results.

Case 8.—One of the most remarkable cases I ever treated was that of Mrs. S., æt. thirty-nine. First seen January 15, 1904. Habitus phthisicus, emaciated, night sweats. No previous history of tuberculosis in the family though her brother-in-law is afflicted. Had been treated for six weeks previously by different physicians for this trouble, which came upon her after a severe cold. Physical examination showed both apices to be affected—right lung more than left. Her greatest inconvenience was caused by a pleuritic effusion just below the right mamma, covering an area about five inches square. Empyema was at first suspected, but the diagnosis of tubercular effusion was finally made. Afternoon, temperature, 101°; sputum contained T. B.; slight leucocytosis; decreased amount of hæmoglobin in individual corpuscles; percentage of hæmoglobin with Reichert's hæmometer 58; urine unusually clear and free from inorganic as well as organic sediment. I did not wish to take up the treatment of this case and tried to persuade her to go to a hospital, but her husband finally prevailed upon me to do what I could. Adrenalin, in twenty-drop doses, was administered every hour for the first three days. Patient was directed to lie with her chest bared to sunlight and a suitable diet ordered. She began to gain and improve from the first day, the area of effusion diminishing appreciably day by day with the assistance of local application of dry heat. Night sweats disappeared about the third day of treatment, appetite increased to ravenous proportion within a week. No rales or even roughened breathing could be heard in left apex after the eighth day. Gained in weight and cheerfulness steadily, About this time complained of pain in region of kidneys and the heart. Urine examination showed nothing abnormal; heart in good condition. As these symptoms occurred synchronously with the appearance of menstruation, it likewise passed away at the end of the catamenial period. Examination of the blood on the eleventh day after treatment began, showed remarkable improvement in the red cells—hæmoglobin, 72 per cent. Tried to get patient to leave the city for her health but she refused to go, because she "felt too well." Discharged her maid and is doing her own housework. Occasional reports from patient say she has gained in health and cheerfulness steadily, though all medicine has been discontinued since February 3d. March 26th patient called at my office upon request. Improved, color good, both apices move freely with respiration, depression about clavicle not so marked, appetite exceptionally good;

hæmoglobin, 86 per cent. weight increased from 112 to 116 pounds in four weeks. May 2d patient called again as she was worried about a recent cold she had contracted. Two months ago treatment for tuberculosis was discontinued, but she is still improving. Weight still 116 pounds, but patient claims she is now wearing considerably lighter clothes. May 16th, weight 118 pounds; still improving.

Case 9.—Another peculiar case in which an unlooked for result was obtained was that of Mrs. K., who had been treated gynecologically on and off for some years. She presented herself on January 5th, with a severe discharge from the uterus. The prolonged state of affairs had distorted the position of that organ so that the cervix was bent back on itself and lay deep down in the cul-de-sac. Though there was not any decided dysmenorrhea complained of, still there were irregularities. I instituted the ordinary treatment without result, and on the 24th curretted the uterus. There being considerable hemorrhage the uterus was irrigated with a 1-5000 solution of adrenalin chloride. After the parts were well washed I swabbed out the uterus with a 1-1000 sol. of adrenalin. Not another drop of blood was shed and patient rode home in the cars shortly after the operation. She has had no irregularities with her menstrual periods since, neither has there been any evidence of endometritis. The flow now lasts but two days instead of four, as formerly, besides being considerably less in quantity. The strange part of this case is that previous to the operation patient was subject to frequent attacks of asthma, which often prostrated her. Since currettment and swabbing out with the adrenalin, she has not had a return of her asthmatical attacks.*

Case 10.—Anna B., colored, æt. nineteen. This case presented the symptoms of stercoraemia. I was hurriedly called for in the evening and found patient in a stuporous condition, greatly depressed, with a fever at 102.6; pulse, 132. Patient had a severe headache with considerable pain in left hypochondriac and iliac region. Abdomen boardlike, fecal masses felt. History elicited the fact that there had been no stool for five and a half days. Ordered a high enema containing magnesium sulph. with a tenth of a grain of calomel every half hour, repeated four times. Prescribed adrenalin, fifteen minims every hour. The next morning, neither enema nor calomel had been effective, but stupor as well as fever had left patient. Temperature, 97.9°; pulse, 104. This condition was rather surprising considering that there had been no evacuation of fecal contents, nor had anything been vomited. Enemas and calomel were again ordered but were not effective until afternoon. It may be claimed that the auto-antitoxines of the individual were responsible for the suppression of the fever and relief of the conditions. This, of course, is possible, but at the same time nature had several days in which to accomplish this result and failed, and the effect was observed only after adrenalin had been administered.

* Since going to press patient has had one slight asthmatical attack; formerly she was afflicted several times a week with severe paroxysms.

Case 11.—Mr. W., æt. fifty-four, presented himself January 6th with an acute exacerbation of an old chronic cystitis. During the week previous to visiting me, he claimed to have been "down with malaria." General health depleted and appetite poor. Blood failed to show plasmodia—urine, no organic deposits—uric acid somewhat in excess; however, a great deal of blood and many active bacteria present. Injected a drachm of adrenalin in two and a half ounces of distilled water after having first irrigated the bladder. Third day thereafter saw patient again—hæmaturia absent, bacteria immobile, but a great deal of pus was now present in the urine. January 11th, pus slightly less, very few bacteria. January 13th, pus, bacteria and blood entirely disappeared. Up to this had been injecting the same amount at each visit. Adrenalin was now discontinued and warm boric acid irrigation given for a week, after which patient was discharged. On February 22d he returned with same symptoms, but not so aggravated as at first. I concluded that treatment had not been carried out long enough, as I had suspended it immediately upon cessation of symptoms. I directed patient to come every day for five days and then every third day for week thereafter. I now injected a full half ounce of adrenalin the first three treatments in about three ounces of water and then began to diminish the dose until patient was discharged. See him occasionally and there has been no sign of recurrence. Patient feels much stronger and can now do any kind of work without fatigue. Appetite extremely good.

Case 12.—Mr. R., with a history of luetic infection dating back six years, was seized with severe pain along the course of his sciatic nerve in the early part of February. This was supposed to be of syphilitic origin and his physician ordered him to Hot Springs, as much to take the baths for his rheumatism as for a course of antiluetic treatment. Improvement was inappreciable up to a short time before his return and he was ordered home. He returned in great pain after a hard journey and in greatly depressed spirits. Patient was referred to me on March 27th for treatment. Being a hard patient to handle, it was decided to place him in a hospital. Morphine had to be administered to quiet his pain. Treatment began on the 28th with adrenalin chloride every two hours. I called in the afternoon of the same day and gave an injection of ten drops of adrenalin at the site of exit of the sciatic nerve. Previous to the injection, patient complained of pain, which he said disappeared upon giving injection and asked whether I had given him morphine. This effect, however, I am inclined to place to the mental action rather than to any quality of the drug. Improvement was very slight from day to day. The third night after entering the hospital, he tried to do without his morphine and the pain was intense. I thereafter prescribed belladonna ointment with mercury and ichthyol. This was very effective the first two nights in quelling the pain, but afterwards seemed of no avail. About this time I had decided that his sciatica was the result of his gonorrhœal infection. Upon questioning him I found that his "clapp had started running again." Two drachms of adrenalin

undiluted (1-1.000) was injected into his posterior urethra. The results following this were so pronounced that the patient could sleep without morphine, and as his pains were very appreciably diminished, I decided I had found the seat of his troubles. In a day or two I repeated the injection after previously washing out the bladder with boric acid sol. However, this time I injected a half ounce of adrenalin in an equal amount of distilled water, which patient was directed to retain for five minutes. Upon passing the same, considerable pain was experienced. From this time on progress was steady, and on April 11th, two weeks after treatment began, patient went down to his office. For about two weeks after that, he still experienced some slight difficulty in getting about. Injections were given about every four or five days. In the meanwhile patient had been taking adrenalin internally every two hours, except for a few days when the dosage nauseated him. The peculiar feature in this case is that after each urethral injection improvement was most marked, so great, in fact, that the patient himself commented on it. The blood taken from this patient at the beginning of treatment showed poikilocytosis with a deficient amount of hæmoglobin in the individual corpuscles—the usual anæmic blood picture of syphilis. Another recent specimen is devoid of poikilocytes and shows a better percentage of hæmoglobin.

Case 13.—Mr. W., three years ago underwent a siege of typhoid which left him a physical wreck. He has been compelled to remain in bed most of the time through weakness. When seen he was confined to bed, stating that his spine was too weak to support him. Patient was extremely anæmic, had a good appetite, but nothing could be ingested without causing discomfort—moreover patient claimed that every morning for the past two years he was compelled to take a cathartic. Diagnosis of dilatation of the stomach with atony of the muscular walls was made. Adrenalin with essence of pepsin as a diluent was given. Patient felt very much exhilarated, and on the third day felt vigorous enough to get up and appear at the dinner table. He conversed with family until a late hour and was surprised not to be weak and fatigued at bedtime. Though under treatment less than two weeks when he left the city, he was much improved in spirit and health, claiming that for the first time in several years his bowels moved regularly without any purge.

Case 14.—Mrs. B., of high nervous temperament, frequently complaining of nervous headache. Usually ten to fifteen minims of adrenalin in a mouthful of water relieves the condition in a few minutes. Sometimes it is necessary for her to remain quietly seated for a quarter of an hour, when a second dose relieves her entirely.

Case 15.—Case of abscess in small of back, size of large walnut. Site red, hard and painful, but no fluctuation. Injected ten minims of adrenalin directly into abscess. Process was retarded and tumor decreased in size rapidly from day to day. About fourth day after injection, small scab came off at site of introduction of needle with single drop of pus adhering to it.

In addition to the acute diseases, cited, I have applied adrenalin in a number of other acute infections and in a wide range of chronic conditions with good result. Cases of gonorrhœa, especially of remote origin, disappear with unbelievably few urethral injections. I have had very gratifying results in anæmic conditions and neuroses of various kinds. Even in certain valvular heart affections, where swollen or cold feet worried the patient, the administration of adrenalin has been productive of very satisfying results. I have also made the observation that since using adrenalin in weak solutions in surgical dressings, I have not had a case of infection.

When I undertook the administration of adrenalin internally, it was not dictated by the voice of empiricism, but the experiments I had made and what I had learned and observed of the action of this wonderful extract led me to conclude that neither the field of its usefulness nor the principle of its action had been appreciated. As stated at the beginning of this article, I am not prepared to advance any theories regarding the action of adrenalin, but a recent unfortunate newspaper article in one of our local papers has made some premature statement from me seem necessary at this time. I endeavored to prepare a report on the series of tubercular cases treated with adrenalin at the Emergency Hospital of this city, together with a number of other private cases for this occasion, but found it impossible to prepare a comprehensive report in so short a time. Hence the results of adrenalin in tuberculosis will form the subject of a separate paper.

In following the trend of my investigations, the way toward tuberculosis was pointed out as a possible ground for proving some of my assumptions. As the ideas were mere suppositions, I present them to you as such, hoping that they may prove food for thoughts to those who are engaged and prepared to carry on investigative work better than I, and become productive of beneficial results. It was observed that in febrile conditions the injection of adrenalin had much the effect of the specific serums. (In one case, temperature 102°—pulse 130 was reduced to 98—pulse 110 in half hour after five minims had been injected. In another case, temperature 103.6° was reduced to 101.1° in fifteen minutes after which another injection was given and temperature fell to about normal.) Naturally the question arose, what is fever that adrenalin should reduce it? Every infection produces toxines, and as we are taught that the toxine is the deleterious substance, then it becomes the office of nature to neutralize the toxines. Does it not seem natural to suppose that as the economy is essentially always one and the same, it is prepared to combat disease with the same weapons? Is it more rational to presume that a different antitoxine, and, consequently, a different serum is manufactured by the body against each disease, or that there is one underlying principle, more or less modified, to meet the demands of each? The fact that the different serums have been found to be more or less interchange-

able in the various diseases would tend to show that they possess some common principle destructive to at least more than one toxine. Another peculiar feature is that the most effective serums are obtained from the diseases which produce the highest fevers. What is the rationale of this? Supposing the toxines in the blood excite the adrenal gland to activity — the adrenal secretion, we know, changes the blood with its potential for oxygen, which when brought in contact with the toxine oxidizes it, producing heat or fever. The greater the amount of toxine, the greater the adrenal excitation and consequent fever. Hence, also, the presence in the blood of greater amounts of adrenal secretion to be drawn off in the serum. This would account for the greater efficiency of serums obtained from infections producing high fever. But it may be asked, why are there no reliable serums for certain virulent infections, say, for example, tetanus. It may be that the tetanic toxine is so great or so virulent as to overpower the adrenal gland, thereby arresting secretion, and hence no adrenal substance appears in the serum. However, there is still another side to the question. Bacteriologists teach us that bacteria do not all discharge the same amount of toxines; neither do all pour their poisons into the blood. Abbot (*Principles of Bact.*, page 494) tells us that among other bacteria the toxine of tubercular bacilli is much more conspicuously present in the protoplasm of the bacteria than in the fluids in which they grow. This offers an explanation for the pertinacity and slow, insidious process of phthisis and, besides accounting for the small amount of fever in the initial stages, gives a reason why there has never been a successful tubercular antitoxine, if we assume that the adrenal secretion is excited by the presence of toxines in the blood, and that the adrenal secretion, either as such or modified by the various toxines, is a large and weighty component of the serums.

In this connection the preliminary note by Ed. T. Reichert, M. D., Professor of Physiology University of Pennsylvania, on "Adrenalin in Morphine and Opium Poisoning and in Circulatory Failure," is very instructive. The tables he has compiled "showing the effect of adrenalin upon heat production (general metabolism), heat dissipation, and body temperature in normal and morphinized dogs," are worthy of study. Injection of weak solutions of adrenalin upon a normal dog produces very little rise of temperature, the difference noted being within the normal range of variation. However, upon a morphinized dog weighing 12.5 kilos, which "was given 0.7 gramme of morphine sulphate subcutaneously, followed by 3.75 grammes intravenously, and this in turn by an intravenous injection of 0.0005 grammes of adrenalin in 3.5 cc. of water," the temperature was found to rise very appreciably. It arose from 37.92° to 37.95° the first minute after the injection, to 38.12° at the end of the third minute, and at the end of eight minutes was 38.05°. The respiration rate, taken at the same periods of time, was 24, 90, 102 and 90 per minute, respectively; the pulse rate 186, 177, 168 and 186.

Dr. Reichert, in offering an explanation of these phenomena, "suggests that morphine acts as a direct depressant to the secretory process of the adrenal glands, thus depriving the vital centers of the secretion, with a resultant marked depression of both the general and special forms of metabolism. In normal dogs, very small doses are without effect, presumably because the quantity of adrenalin introduced is so minute as to be rapidly destroyed or compensated for by an inhibition of the secretory activity of the glands; but in morphinized dogs, because of the blood lacking the probable normal constituent, adrenalin is not destroyed until it has been utilized in its normal work." It seems to me a more probable suggestion for the explanation of these effects, is to suppose that the office of the adrenal secretion is to carry on the general metabolism of the body through oxidation. Every oxidation being accompanied by heat, and every animal having a normal constant metabolic process going on within its economy, the resultant oxidation due to the adrenal secretion ought to maintain a constant temperature under normal or constant conditions. This we know happens; variations do occur, following many changes—such as exertion or ingestion of food. This at once, however, creates a different ratio for metabolic change. Under normal conditions there are being manufactured products for oxidation (metabolism) at a fixed rate, and at an equally fixed rate adrenalin is secreted in the body to oxidize these products, thus giving rise to the body temperature. Now, suppose more than the usual amount of adrenalin is suddenly introduced into the blood, as Dr. Reichert did with his normal dog experiment, what occurs? The same amount of products remain to be oxidized, it is true, but more of the oxidizing agent is present in proportion, and it ought to occur more rapidly. This would cause more heat than normally, consequently a rise in temperature—precisely the result obtained in the dog. But, carrying the idea further, if these products were oxidized ahead of time, so to speak, or that more was oxidized at once than could have been taken care of by the normal secretion, then it would take some time for enough of these products for oxidation to accumulate to be again acted upon by the adrenalin secretion. What would we expect during this interval of time? A fall of temperature; exactly what Dr. Reichert reports. From the fact that there is a small rise of temperature, inappreciable though it may seem, still this appears to me sufficient to show that the injected adrenalin is used up by the economy, and not, as the doctor supposes, "so minute as to be rapidly destroyed."

As for the explanation offered for the resulting phenomena in the case of the morphinized dog, we can follow the same line of reasoning, only prefacing our hypothesis by calling to mind that opiates arrest the functions of secreting glands. This being the case, we have two actions to consider. First, there has been cut off the usual supply of adrenalin secretion to oxidize (or to carry on metabolism) the body products, which are

now left to accumulate unoxidized; secondly, a new poison has been introduced which, either directly or through its changes, must also be gotten rid of. Applying the same principle as before, what do we expect? The natural flow of the secretion being withdrawn, hence oxidation retarded, we ought to have a fall of temperature and a decrease in heat dissipation. After the artificial introduction of adrenalin we ought to have a decided increase in temperature, because of the more than usual amount of products which have accumulated in the blood for oxidation, not to mention the additional feature of the presence of morphine. By referring to Dr. Reichert's table accompanying experiment "B," we find recorded the results expected under the oxidation hypothesis:

Without offering any explanation, the doctor remarks further on that "the results of foregoing experiments, together with those of a number of others not included in this article, show that adrenalin when intravenously injected in the dose of 0.0005 causes, as its most important effects, a more or less marked decrease in the pulse rate which is usually preceded by a transient increase, and followed by a marked increase, a more or less decided increase in arterial pressure, but which usually is transient, rarely lasting for more than a few minutes, although the rise can be maintained by repeated injections, and an increase of general metabolism and body temperature. The pulse and arterial pressure are the first to be affected, then the respiratory movements, and then general metabolism

EXPERIMENT B. DOG; WEIGHT, 12.8 KILOS. DOSE, MORPHINE SULPHATE, 0.01 GRAMME PER KILO OF BODY-WEIGHT; ADRENALIN CHLORIDE, 0.00025 GRAMME PER KILO OF BODY-WEIGHT.

(Table Compiled by Edward T. Reichert, M. D.)

	Hourly Heat Production.*	Hourly Heat Dissipation.	Rectal. Temp. Beginning of Hour.	Rectal. Temp. Ending of Hour.	Gain or Loss (+ or −)	Mean Room Temperature.
First hour before morphine	21.097	25.398	39.14	38.72	—0.42	26.4
Second hour before morphine	23.978	26.640	38.72	38.46	—0.26	25.6
Hour after morphine	19.908	21.444	38.46	38.31	—0.15	24.4
First hour after adrenalin	22.742	22.230	38.31	38.36	+0.05	24.8
Second hour after adrenalin	24.090	22.554	38.36	38.51	+0.15	25.5
Third hour after adrenalin	23.842	24.352	38.51	38.36	—0.05	25.7

*The units of heat production and heat dissipation are in kilo gramme degrees; the temperature records are in the centigrade scale.

and body temperature." These results tally with observations I have made with my patients. Of course, through internal administration, the effect on respiration is scarcely noticeable, except after large doses. The other results are less marked and slower after internal administration than after subcutaneous injection, and subcutaneous injection is likewise followed by a less rapid manifestation than intravenous injection.

At the close of the article, the doctor says that "the increase in respiration rate is caused by a stimulation of the respiratory center, since it occurs after section of the vagi." Undoubtedly there is some nervous relation to the results obtained, but I am inclined to think that the nervous stimulation is due to a physical effect for which I suggest this explanation. The increased respiration which results from an intravenous injection of adrenalin can most easily be understood, when the oxidation principle of this drug is applied to the physiological act in the lungs. The blood being now charged with more than its usual quota of adrenalin possesses an unusually high potential for oxygen, and after such an injection, the capacity of the air alveoli is called upon to the utmost to fulfill the demand made by the coursing blood in its passage through the alveoli. In order to supply this increased demand during the time consumed for the passage of the blood through the alveoli, the lungs must work faster.

In all cases of dyspnœa reported through overdosage, none were grave —all discomfort disappearing in less than five minutes. All of which might be explained by the fact that the blood, after being oxidized under high potential, distributed its oxygen to the tissues, and by the time it returned again to the pulmonary circulation, the potential of the adrenal extract was so reduced that there was not the same demand for oxygen as before.

The only other cases of ill effects I have found in the literature following the use of adrenalin are reported by Emil Mayer, M. D., New York (*Phil. Med. Journal*, April 27, 1901, p, 819). Sloughing is said to have occurred in several instances where adrenalin was used in rhinological work. This may have resulted from either of two causes, or a combination of both. First, the solution may have been so strong that the ensuing oxidation amounted to a burn, or the parts may have been, owing to their anatomical construction, practically cut off from blood supply after vascular contraction had been produced by adrenalin.

It is not without some trepidation that I suggest the internal administration of adrenalin, because its intelligent and successful application, especially when given over an extended period, depends upon a frequent examination of the blood and the estimation of the number of red cells. Experiments seem to indicate that adrenalin has opposite effects on the blood; there is a partial hæmolytic action observable clinically as well as in the laboratory. At the same time there appears to be a regenerative process. The administration of adrenalin is accompanied by pronounced leucocytosis as well as an increase in hæmoglobin. The increase in hæmoglobin to the casual

observer would seem to be only apparent as the number of red cells in the majority of cases decreases. But if adrenalin be discontinued the red cells increase very rapidly, even beyond the original count, and at the same time the hæmoglobin percentage will still be found to be on the increase. Hence, the ratio between the red corpuscles and the hæmoglobin percentage is disproportionate, as the color index does not decrease, but, on the contrary, increases. This fact, then, teaches that in those cases where adrenalin is given for a prolonged period it is advisable to discontinue the medicine every seven to ten days for a period of two or three days in order to permit the red corpuscles to generate. The hæmolysis occurring in human blood may be attributable to the fact that the marketable extract being obtained from cattle is hæmolytic as regards human blood, and that an extract from human glands would not act in the same manner.

Idiosyncrasies against adrenalin occur just as with other drugs. I have known instances where the entire family could not take it. The greatest difficulty is to adapt the dosage to the individual. Frequently patients who have had too large a dosage carry on most vehemently against the medicine because of its effects—nausea and headache. Of course, the ideal dosage would be a few minims every half hour, but this is impracticable in the greater majority of cases. So the maximum dose to be repeated at reasonable intervals had to be decided upon. This was found to be ten to fifteen drops every two hours. In general, as large a dose as the patient can withstand ought to be given; the dose can well be regulated by the fever. The higher the temperature the more adrenalin can be borne. I have given twenty minims every hour without nausea or headache, but as soon as the fever falls the dose must be decreased, both in interval and amount.

Subcutaneous injections act more directly on the heart and fever and produce a weak sensation in the lower limbs. It is a noteworthy fact that temperature, due to whatever cause, is rapidly reduced by subcutaneous injection of adrenalin, the pulse likewise returning to normal but at a much slower rate. By far the best systemic effects are derived from internal administration. It seems to excite all the organs to their best functioning capacity by supplying them with blood rich in oxygen. Internal administration in full doses produces nausea and frontal headache. When inhaled the full physiological effect is followed by immediate dizziness and a sensation of coolness and roominess in the lungs.

Adrenalin invariably produces a sound, healthy sleep. If patient is in the habit of dreaming it generally causes the disappearance of dreams. If, on the other hand, patient is habitually a sound sleeper, it often causes him to dream. In the one case the accumulated toxines which disturb the brain would appear to be neutralized; in the other case a possible explanation would be that the sleeping brain is excited to activity by being fed with a rich oxygen-laden blood. Increased appetite invariably occurs when adrenalin is administered.

In my experiments and in my practice I have used several preparations of the adrenalin extract, but found that I had practically to limit myself to one, as all could not be promiscuously compounded into mixtures there being, according to my observation, a considerable range of stability. Even the most satisfactory product on the market when combined with syrups, and especially in the presence of alcohol, is accompanied by fermentation.

By a process of deduction and with some of the clinical evidences I have enumerated, I feel confident in suggesting the use of adrenalin internally in all infections, on the principle that it oxidizes the toxines and converts them into benign waste products ready for elimination. Hence, I suggest its use in tetanus, scarlet fever, diphtheria, pneumonia; in short, the entire category of infections. In typhoid, not only to arrest possible hemorrhage, but also to combat the toxines in appendicitis for its local as well as for the constitutional effects. On account of the conditions presented in Addison's disease it is pre-eminently demanded in this malady. No agent I am aware of increases the hæmoglobin percentage as markedly or as rapidly as adrenalin, hence it is indicated in anemias of all kinds, likewise in neuroses and so-called "stomach cases" due to malnutrition. Syphilitic anemia, as well as the disease itself, has been found to be benefited with adrenalin. In those cases where a reconstructive tonic is needed, adrenalin can well replace with far greater advantage the arsenical and iron preparations. The virulent toxines of severe burns ought to yield to adrenalin, here the treatment might be applied locally also, just as in chronic ulcers. The packing of tubercular joints and the specific tertiary ulcers with a weak solution of adrenalin containing soluble iodine, ought to be valuable. In morphine and opium poisoning, and other poisons acting directly upon the heart, likewise syncope due to chloroform or otherwise, would seem to demand adrenalin from its well-known action on the heart. Owing to its astringent properties adrenalin is indicated in hemorrhages of all kinds: postpartem, hematemesis, hemoptysis and in the irregularities and flooding of the menopause. Septicaemia would seem to call for adrenalin in its treatment, and as a prophylactic measure its administration after operations hypodermically as well as per os is indicated, aside from its value as a reconstructive tonic and heart stimulant. To the dermatologist adrenalin, especially when judiciously combined with other remedial agents, will prove invaluable in the treatment of certain forms of skin affections. Besides the usual indications for adrenalin in ophthalmology, it is useful where systemic treatment is required. It has been found to be decidedly advantageous in syphilitic iritis, where local application was supplemented by internal medication with adrenalin. In the diseases of the respiratory tract, inhalations of diluted solutions are productive of more gratifying results than in any other conditions.

In concluding, permit me to call special attention to the therapeutic value of adrenalin in pneumonia. Because of the pathology of pneumonia,

where the process of aeration of the blood is choked it has a peculiar fitness. The oxidation process, whereby pathogenic elements are converted into benign waste products, resulting in fever, instead of being pounced upon with hæmoglobin-reducing antipyretics, ought to be assisted in its endeavors. This effect ought to be accomplished by supplying the organism with the means of obtaining oxygen, free or combined, in such a state that it can immediately be utilized by the economy for oxidizing deleterious substances. Inasmuch as the red blood corpuscles are only the carriers of oxygen, and the adrenal extract endows them for their affinity and potential for this essential gas, is it not reasonable to assume that by maintaining or increasing this supply in fevers, especially in pneumonia, where the usual avenues of oxidation of the blood are blockaded, that we are assisting nature in her efforts to supply oxygen for oxidizing harmful agents? Whether the presence of this adrenal secretion in the blood should be accomplished through excitation or stimulation of the adrenal body by means of drugs, or be injected subcutaneously into the blood stream direct from the marketable products, depends upon conditions and is a question to be decided. From my experience, the internal administration of the extract is productive of satisfying results; more than that, heart failure, which is the dreaded bugbear of pneumonia, with this treatment assumes a minor consideration, because instead of bolstering up the heart with strychnine, whisky and other drugs, we can rely on nature's own heart stimulant, which likewise is eliminated without ill-effects. Certain drugs have a decided effect on adrenal secretion, and it may be a wise procedure not to allow these glands to remain idle by permitting an artificial product to do the work; moreover, there is an advantage in having present in the blood as much human adrenal secretion as possible. The efficacy of the lately advocated potassium iodide (Altshul) treatment depends upon the action of the iodine on adrenal secretion for combating the fever. It is a well-known fact that but a small amount of the iodine in combination with potassium is assimilated. Hence, I advise combining the suprarenal substance with an iodine solution in distilled water. However, indiscriminate admixture of iodine with any and all of the marketable products of adrenal extract must be guarded against, because a chemical disintegration ensues when this is attempted with some of the preparations.

Considering how rapidly the adrenal extract is dissipated in the body and how often the dose may be repeated, it seems to me a slowly dissolving tablet, with some easily assimilable iodine compound, as a core, would be a valuable addition to our therapeutic armamentarium. The powdered or crystallized extract could be suspended in gelatin or some other slowly dissolving and preservative substance and in this way the suprarenal extract could be paid out slowly along the course of the intestinal tract. Thus, while preventing the entire dose, which, in some cases must be large, from acting immediately; it would likewise save the mucous membrane from a concentrated action at

one point by paying out small quantities all through the course of the alimentary canal.

One of the proprietary concerns placing the active principle of the suprarenal capsule on the market cautions the profession against subcutaneous injection of the same. I have given injections of this substance numerous times and have yet to see the slightest sign of irritation to follow this mode of administration. This I attribute principally to the fact that I have always diluted the solution with equal parts or more of normal saline solution or distilled water, and while injecting empty the syringe slowly, drop by drop.

With the parting caution that success in the use of adrenalin depends on a careful adaptation of the dose to the demands of each individual—that as large a dosage as can be borne is to be prescribed—and that a watchful eye must be kept on the ratio of the hæmoglobin to the number of erythrocytes, I leave the welfare of adrenal therapy in your hands.

LEGAL VIEW OF BOARDS OF HEALTH.

By A. M. McAlester, M. D.
President State Board of Health.

Physicians often hear persons afflicted say, "your health board is interfering with my rights as a citizen of this free government; you are sending your local physician to quarantine my home, forbidding ingress and egress; my business interests suffering, my children kept from school, etc."

No matter how free and liberal a government may be formed, government is necessary to control; control implies a surrender of some of our rights; you cannot form a compact with your neighbor without a surrender—a mutual surrender—of rights for mutual preservation; this implies mutual protection of all unsurrendered rights and enforcement of all surrendered rights, with a body of some kind to enforce and be a final appeal. For convenience, in all matters pertaining to public health, we speak of the controlling body in such a case as a board of health, having control of all matters that would prolong human life and mitigate human suffering. What higher prerogative could a government have than to protect the lives of her subjects? This is the greatest reason why government is formed. This carries with it boards of health in this country, local, state and national boards of health, each supreme within their sphere.

The compact between the states implies surrender of rights, and when a state is admitted into the union of states, those already in have a right to know her organization, to know that that organization is protective of human life. There must be a manifestation of intelligence to protect her own citizens and thus protect other states before entering into this mutual compact of states.

Thus, to bring the matter home, you reduce all contagious and infectious diseases down to individuals, with a local health officer in control—mutual

protection, facilitating and making safe our commercial relationship with the world.

Hence, the advance of science, medical science, has opened up a new field as to sanitation. The ship laden with cholera germs can be anchored in harbor, disinfected, made clean and in a few days be reloaded and sail out upon the high seas,

To come to our homes, we often see school houses placarded, "Closed on account of scarlet fever," etc. With an efficient local health officer, the unfortunate child could have been quarantined at home and inspected and returned to the school room that had long ago been cleaned and disinfected when the first case broke out, and thus made safe. If society has a right to imprison a vicious man, thus protecting say one human life, how much greater the necessity of protecting large bodies of persons, especially innocent children, from contagious diseases.

That legislation is needed in this state as to a new health law goes without question. This should engage the attention and thought of every member of the profession. The people rightfully look to you as the exponents on all matters pertaining to health. You, as a physician, have a legal exponent upon such matters in the form of a state board of health. This board is your creature.

Under the law of this state this board must present to each legislature assembled such changes as the board deems to be the best interest of the people. It is then very clear that this society must present whatever view is entertained through this board; otherwise you go to the legislature as mere petitioners. Antagonism means defeat, defeat means loss of human life. The state association, district and county associations and the profession individually, should inculcate upon the people the great and urgent necessity for a new health law.

It should be taught that all contagious diseases are amenable to preventive measures directed by local boards of health, That the great water supplies of this nation are being rapidly polluted by commerce and the growth of her people, all in their sphere legitimate, while the beautiful spring, clear as crystal, once pure as the driven snow, is laden with deadly germs — say of typhoid fever; some sewage has contaminated it. Questions of hygiene stare you in the face at every step as you progress. Wherever you go you have the right to know that you can obtain a drink of pure water.

Then let this association, through its legislative committee, meet the state board of health and formulate jointly a new law—a law abreast with the civilization of the age, containing water, contagious diseases and vital statistics under executive control, local board of health subsidiary to state board and that to the hospital and marine public health at Washington, D. C., as the great controlling body. Let every member do missionary work. Let him see that his representative and senator to be elected this fall are pledged to support this measure. Let these gentlemen understand that an intelligent constituency means to hold them responsible for the passage of a law coming from the guardians of health; that it is as much their duty to support such a

measure as it is to protect their lives and property from criminals; that these criminals parading in bacterial uniform, multiplied by the billions, are far more dangerous to human life from their occult living. Let these living germs be dug from their anærobic homes and placed in the broad sunlight and thus robbed of their virulence.

Discussion.

Dr. Herman E. Pearse, Kansas City.—My experience in the Hall bill has given me some insight into the difficulties that we labor under when we attempt to better our condition. All the voting power of this state association will not put one man on the state board of health. We have always had one or two, and occasionally three active members on the state board of health, but we have no means by which we can demand the place of a man there. But this is one thing we should take up and take it up intelligently and systematically, and we should see that our county delegation take up the character of the men sent up. It is the peeple and not the doctors that the politicians listen to. I think Dr. Allen is right when he says we should educate the public.

Dr. George Halley, Kansas City.—While I accord with everything that has been said, the remarks of Dr. Allen are particularly appropriate. There is a pressing need and a wide field, particularly in the large cities, regarding national legislation, and, as a body, the state of Missouri can do no better than memorialize congress. There was a bill passed by our friend, Ed Butler, I believe, that has not received the attention it should have. The filthiest thing that any people can do is to turn all their filth into the waterways and then drink it. It has created more disease than any other factor in our municipal life. Fort Leavenworth is simply a pestilence hole. They drink the water two and a half miles below where they empty in their sewage. The post surgeon said they could draw water from the faucet at any time and get the colon bacillus in it. Kansas City is taking water twenty-four miles below and there is no time when you cannot find the colon bacillus in the water. St. Louis is taking the drain water from Chicago and all the towns along the river. When I went to Kansas City there was not a drain in the city connected with the water closets, now they are all connected. There must be some national legislation on the emptying of filth into the waterways. I move that we appoint a committee to memorialize congress for a national law and that it be enforced by the national authorities.

Dr. J. M. Allen, Liberty, Missouri.—We have had nothing that so interested me as the report of Dr. McAlester. The question for us to decide is how are we going to meet the situation. The politician is always on the ground, but I have great faith in the voters of Missouri and I have great faith in their being educated. We have ample opportunity to educate in Missouri. In our county we have a public health meeting every year to which all are invited. We are accomplishing good work. Suppose every county medical society sets aside one day and invites the public to come and hear these things. As it

is, the public does not know anything about it. Their ears are being filled all the time by the talk of the politicians. You can reach them in this way, and there should be resolutions passed here that every medical society in the state of Missouri devote one day to a public health meeting. They will know then you are in earnest. Truth will prevail. We are to blame that we do not have the kind of legislature we need. Put your shoulder to the wheel and let every district and county society hold such meetings and invite the public, get the best speakers and you can soon enlist the whole community. Again, in our county, when the teachers have their institute, we have some one present and arrange to have an article on public health. Suppose you could educate up all the teachers in the state of Missouri. They will talk it all winter. I have never been to an institute yet that they did not unite with us most heartily. Believing, as I do, in the integrity, the honor and the human feeling of the people, I believe all we have to do is to get to work and educate them a little and they will do the rest.

Dr. A. W. McAlester, in closing.—Perhaps some of you gentlemen have not watched the course of legislation. In 1902 there was a statute placed upon the books establishing a national board of health, and this law still exists. The manner in which that was done, some thirty states got together and agreed to ask every congressman and representative to work for this law. They asked if it was for the benefit of the citizens and the answer was yes. The bill was passed and it is a law now, and the surgeon general has called a meeting for 9 o'clock, June 3d. This is the only legal national board of health in the United States.

SYMPTOMATOLOGY OF PROSTATIC DISEASES.

By J. Leland Boogher, of St. Louis.

Having so frequently had my attention directed to symptoms which were relieved by prostatic treatment from which the patients had suffered, it occurred to me that it might be of value to describe some of the symptoms often mentioned by patients, which had frequently been treated locally, unnecessarily, without their real cause having been discovered. Prostatic disease is usually of such insidiously slow development that symptoms arising in distant parts of the anatomy are, I believe, often supposed to be due to other causes, and for this reason the suffering is allowed to go unrelieved, when, should the cause of the disturbance be discovered, the pains could be cured by direct treatment of the prostate gland.

In the many prostatic conditions, the symptom complained of most frequently is the discharge at the meatus known as gleet, and in this condition the anterior urethra can be treated until both patient and physician are tired of the effort and no result accomplished, but treatment of the prostate will speedily produce relief. The heat and tenderness, and often constant pain in the perrineum,

are the results of prostatic disease and are associated with mushy infections of the prostate. Frequency of urination is often associated with this condition, and pain in the lumbar region, most severe on rising, is a very frequent complaint. In these mushy conditions of the prostate, the result of infection, there is sometimes a general malaise and low fever and a nervousness of more or less severity, and a tired feeling which a night's rest does not seem to relieve. Often in this condition the patient is directed to the necessity of a physician's care and by the milky or cloudy condition of his urine, which they consider indicates diseased kidneys. This is more marked after a horseback ride or an unusual indulgence in alcohol or venery or physical excess of any kind. In these conditions spermatorrhea is often complained of, and is at times copious during or after a passage from the bowels, and is sometimes accompanied with blood. Seminal emissions, frequency of erections, early ejaculation or pain on emission, may be due to the prostatic disease. When the above mentioned symptoms are complained of, it is always advisable to examine the prostate and its secretions, notwithstanding the declaration frequently made by the patient that he has never suffered from a genito-urinary disease.

The few symptoms I have mentioned are more often the result of mushy prostatic conditions, the result of infection, but may occasionally accompany a nodular or fibrous prostate, but as a rule, the symptoms complained of in nodular or fibrous conditions are in more distant parts of the body and the cause of complaint is not so suggestive to the physician. I have frequently examined the prostate where the symptomology indicated a mental or nervous disease and found a pathological prostatic condition, which, under treatment, was relieved and all mental and neurological symptoms disappeared. These cases have frequently been referred to me by the neurologist when the patient supposed his genito-urinary organs were in normal condition.

In the nodular or fibrous conditions the mental stamina and force of will is sometimes greatly impaired and the lack of energy so noticeable in these cases is of considerable moment, especially where work and hustle are necessary in a man's life. This is most frequently complained of about the age of forty-five years, when one should be still passing the upward milestones in life. The active business man, when in this condition, feels that he can no longer exert the energy and push necessary in his avocation; the man of large affairs finds, after a few hours' work, that he is mentally exhausted and those engaged in active business or athletic exercise can no longer continue at the previous pace, and the symptoms are seldom referable to a prostatic condition, the cause of which has long since been forgotten. Slight cares, once easily thrown aside, are very irritating and the disposition is more or less affected by a deranged prostate. One symptom that I consider of great importance is the ocular symptom so frequently complained of, which was first called to my attention by Mr. Charles Reilly, of St. Louis, an optician, who has frequently referred patients to me for prostatic treatment when the only

symptom complained of was pain in the eyes, accompanied by water, and the patient's desire for glasses to assist sight. Prostatic conditions cause an irritation and consequent contraction of the sphincter muscles of the urethra and rectum disturbing the equilibrium of the sphincter sympathetic centers and a consequent contraction of the sphincter muscles of the eye, which produce an irritation and resulting irregular accommodation and apparent astigmatism. At times to the extent of 1.50 diopteres, but usually from 0.50 D to 0.75 D Cyl. In all cases the Cyl will improve vision, but the patient can see as well at any axis varying from 20° to 30.°

It might be of some interest to mention a few cases showing the variety in results that have been obtained by the same oculist, examining the same case at various times. Mr. V. G., thirty-five years old, of St. Louis applied to Dr. E., a well-known oculist, complaining of a sandy feeling in his eyes and a constant discharge of water and severe pain in outer canthus of left eye. Dr. E. prescribed glasses as follows: Right eye, plus one-half dioptre cylinder, axis 90, combined with one-half degree prism, base in; left eye, plus one-half dioptre cylinder, axis 90, combined with one-half degree prism, base in. At the end of four months the patient having received no benefit from the use of the above glasses, appealed to another well-known oculist, who prescribed as follows (please note in these glasses the cylinder to correct the supposed astigmatism was omitted): Right eye, one-half degree prism, base in; left eye, one-half degree prism, base in. The cylinder was left off, showing that signs of astigmatism had disappeared, as this condition varies during the patient's trouble.

At the end of three months' use of the second pair of glasses, without relief, he was referred to me for prostatic examination. I found in examination of his prostate that it was nodular in character, about the size of a lemon, and on examination of the prostatic secretions, contained a mixed infection. The patient had suffered from several attacks of gonorrhea, but for the past three years had not found it necessary to pay much attention to his genito-urinary organs. He had also noticed that his energy was greatly lacking, and that after copulation he suffered with great pain and tenderness in the perenium, and that for the next day or two his eyes seemed to be very much worse. A short time after treatment of his prostate he dispensed with his glasses and has not used them for the past four years. Mr. H. W. H., age forty-eight years, southeast Missouri, had consulted several oculists for relief of blurred vision, discharge of water from the eyes and constant pain and irritation in outer cathus of left eye. He was referred to me by an optician, from whom I heard that he had had the following prescription filled:

Dis. vision required, plus 1.50 S.

Reading required, plus 4.00 S.

His corrected formula for the right eye was: Plus 1.50 S., combined with one-half dioptre cylinder axis 95; left eye, 1.50 S., combined with one-half dioptre cylinder axis 130, vision 20:20.

It was found by the optician on

revolving cylinder that the patient could see with the cylinder at an axis of from 95 degrees to 130 degrees in the right eye and from 130 degrees to 150 degrees in left eye. After the optician had questioned the patient, he found that he had suffered from genito-urinary trouble and he was referred to me for treatment. Six weeks after treatment, the optician examined the patient's eyes and found that all evidence of astigmatism had disappeared and all irritation of the eyes had been relieved. On examination of the above patient I found an enlarged fibrous condition present, which yielded but very slight secretions, which upon examination disclosed no germ life. On questioning him, I found that he frequently experienced pain in urination. Copulation had ceased to be a pleasure and was exceedingly difficult of accomplishment, and then only at very rare intervals. He frequently found it impossible to attend to his desk work longer than an hour or two without great exertion. He had also noticed that his memory was failing him. I had the pleasure of a call from this gentleman a few months after I had discharged him as cured, and he said he felt in every way like a new man.

I have had so many of these cases that time nor space would permit me to enumerate further, and as there is great similarity in all these cases, it is not necessary to do so.

I have brought this subject before this Association because I believe that some of the symptoms I have enumerated have not been generally recognized as being the result of prostatic diseases, and hope the suggestions I have made will be of some benefit to some of my brother practitioners.

RESECTION OF THE HIP JOINT.

By Ernest Lowrey, M. D., Excelsior Springs, Mo.

Mr. President and Gentlemen—I want to invite your attention to a few practical points in connection with the resection of the joint at the hip, and present to you a case operated on twenty-one days ago today.

The history of the resection of joints dates from 1783, when Henry Park formally proposed the operation for the removal of disease.

In 1786, Morue first performed it, and became its staunch advocate as a method of treatment. Little was done, however, until Symes in 1831 in the elbow, and Ferguson in the hip, knee and wrist, made use of this operation as a conservative method of treatment. Since this time this method of treatment has been wonderfully advanced and has been adopted by the ablest surgeons.

A resection is a removal of a portion of the skeleton without great sacrifice of the tissues of the soft parts. Applied to joints it has for its object the more or less complete removal of the bones forming the joints, the preservation of the sensibility, contractility and vitality of the soft parts influencing the joints and the ultimate restoration of motion or the production of ankylosis.

The resection of the hip joint was first performed by White for deform-

ity in 1818, for disease by Houston in 1822 and by Ophenhimer for gunshot injury in 1829.

Resections are classed as complete when the acetabulum is partly removed together with the femur, as partial when only the femur or acetabulum is removed.

The indications for the operation are:

First—Some cases of gunshot injury. More conservative methods are now recommended with our new projectiles, and operative interference is not urged unless it will expedite wound healing.

Second—In tuberculosis. Where operative procedure is not to be delayed, but earlier interference to be recommended.

Third—In deformity from injury or disease. Here the partial or complete resections are alone indicated where osteotomy cannot correct.

Fourth—In old dislocation from disease or traumatism. Where partial operations are quite sufficient.

Fifth—Intracapsular fracture of the neck of the femur, followed by disability and pain. Here the partial resection confined to femur is sufficient.

Sixth—In dislocation of head and fracture of neck of femur. Here removal of dislocated head is sufficient.

Seventh—Congenital dislocation in adults, which has failed of reduction by manipulation.

Eighth—In acute infectious arthritis. Here arthrotomy, rather than resection, will be found more beneficial.

I shall not enter into the statistics of this operation as to mortality or its functional results, suffice it to say that shortening is much less by the operative treatment than the conservative. In the older cases the average shortening is not increased from operative procedure over that which existed at the time of operation.

Functional results in these cases must be considered with reference to the condition of the extremity at the time of operation, and has to do with (*a*) shortening of extremity due to atrophy from non-action; (*b*) slipping upward of head of femur on the ilium; (*c*) contraction of the soft parts; (*d*) atrophy of musculature of pelvis and femur.

In the foregoing remarks I have quoted from the leading authorities of the day, and the case here presented is Mr. H. M. S., age twenty-eight years, single, American, family history negative; personal history, fifteen years ago was thrown from a horse, and soon after complained of pain in knee joint, and continued to do so for three years. After that he would often fall in walking and complain that his knee had given out. He was put to bed by his physician and limb extended by weight and pulley. Three months later, while still in a recumbent posture, an abscess formed and pointed in Scarpa's triangle, and was opened. He was then allowed to go on crutches, with weight in sole of shoe. The sinus continued to discharge, hip became ankylosed and very painful and continuously atrophied, and shortened.

I saw him first on the first day of July, 1904. Physical examination, negative, except as to left leg and hip, and a temperature 100 and pulse of 98. His left leg was about half the size of the right and five inches

shorter. Very painful, completely ankylosed, though the displacement was not great. I suggested an immediate operation, and discussed with him amputation at hip, and complete resection, my opinion favoring the latter.

He consented, and on the 4th of July, having prepared a room in his house, in our usual manner in the country (removing everything from the room, scrubbing the floor and walls with strong bichlorid solution, etc.), I opened hip by Langenbeck's method, slightly modified.

An incision a little anterior to posterior superior iliac spine down to and behind the great trochanter and followed axis of femur. Joint opened and luxated, and found as you may see from specimen; the head of the femur was completely necrosed and almost wholly absorbed, and the whole of the upper part of shaft and neck, with the great trochanter, was involved in the diseased process. I sawed through shaft just below trochanter, first severing its attachments, and with a sharp curette removed the remains of what had been the acetabulum and scraped away all of the diseased innominate bone. Put in drainage, closed wound and put patient to bed.

His recovery was uninterrupted and uneventful. The wound closed by first intention. He never had any fever. Removed drainage on fifth day and sutures on ninth. He now has considerable motion of limb, is able to abduct it and is around on his crutches.

The microscopic findings show the condition to be tuberculosis.

SUPERSTITIONS PERTAINING TO THE BIRTH OF THE CHILD.*

The old saying, "where reason stops, superstition begins," does not always hold true. The best of the country people, particularly representatives of the fair sex, are filled with superstitious ideas.

Around the all-important event in the life of the individual, "the birth," is woven an intricate wreath of old myths and usages. The following are superstitions which are encountered even today in upper Austria, Salzburg and vicinity:

When a woman is pregnant she should not put her hands into unclean water, otherwise the child will have ugly hands; she should rub nothing with the apron which she wears, for if she does, the child will have an eruption on the scalp. If she wears flowers on her breast the child will have offensive breath.

If the pregnant woman has a special desire for fish, the child will die or the birth will be premature. It portends the death of the child when the mother dreams of a dead fish or hears the cry of the night owl.

If the mother during pregnancy purloins anything, the child will ever be unable to resist the impulse to steal. If the child-bearing woman crosses a garden spot or a field, nothing grows thereon for several years, or the growth decays. If the woman

* Translated by Dr. Franklin E. Murphy, Kansas City, Missouri (in Muenchner Medizinische Wochenschrift, August 9, 1904.)

dons a black apron, the child will be timid.

If at the beginning of the ninth month, the prospective mother on her way to church first meets a man, the child will be a son, if a woman is encountered she will bear a daughter. If she meets no one, she will not bear a second child.

If two nursing women drink together, one drinks the other's milk away.

The child coming into the world face upward will show criminal tendencies.

At confinement the woman should have on a piece of the husband's clothing, that the labor will be easier. When women enter the room during the labor, they must quickly remove their aprons and describe a cross on the abdomen of the lying-in woman and then quickly don the aprons again. They do this to hasten the labor and to make themselves fruitful. They should also burn some twigs from the broom which was used to sweep the lying-in room.

At severing the cord, the midwife must say "my child now I cut wit and sense in the name of the Father, Son and Holy Ghost." The new mother says "amen" and must bite into a raw onion three times, be raised in bed three times while she blows three times into each fist. This hastens the afterbirth and lessens the pains. The afterbirth must be buried under a green tree, that the woman remain fruitful.

To provide against the attacks of the evil one, the trousers of the husband must be hidden in the bed; for the same reason the woman, at the approach of night, should not be left without a light.

If the new born be rubbed with the afterbirth it loses birth marks from face and body.

If one lays three pennies in the first bath, the child will never be without money; if a penholder, the child will learn easily; if an egg, the child will have a beautiful voice. The three pennies and the egg must be given the first beggar.

The smaller the pitcher from which the water is poured into the bath tub, for washing a girl baby, the smaller will be her breasts. As soon as the child is raised from the first bath, the midwife should spit therein three times, for then the "evil eye" will not harm the child. This water is then, as with the afterbirth, disposed of under a green tree.

For the first six weeks the child's clothing should never be hung over a pole over night, otherwise the child will have inflamed joints.

A child should never be weaned from the breast when in summer the fields are covered with grain, nor in winter when the fields are covered with snow.

When the new-born is first brought to you, you should give it three, six or nine eggs, hold them three times to its mouth and say, "When the hen begins to cackle, then begin to prattle."

If the child's hair be cut before the seventh year, the understanding is cut away with it.

A new born child should not at first be laid upon the left side, otherwise it will be left handed.

If, at the birth of a boy, Venus be

the morning star, he will have a young wife; if evening star, an old wife. The seventh son is able to heal, and is fortunate in planting.

Children born on Sunday are lucky and can see ghosts. If the new born does not nurse, one should feed a black dog in the room.

Lightning never strikes in the vicinity of a child which sleeps during a thunder storm.

The first walk with the child should be to the church, where at the altar it is to be blessed, that the evil one will shun it. From the church the child is taken to the godfather, who gives it a bread roll, an egg and a glass of wine. With the egg the child's gums are rubbed, that it will have no trouble in cutting teeth.

Visiting women make the sign of the cross three times over the mother and child; this protects from the might of the evil one.

Wednesday or Friday should not be chosen for the consecration ceremony. The mother should first take together, to a place, all clothing which she will wear at this ceremony, for then the child will observe order life long.

If those to be blessed, step over a broom before they go out, no accident will befall them. If the person who lights the candle to be used at the ceremony is a man, the next child will be a boy; if a woman, the next child will be a girl.

If a pregnant woman visits a brewery, the beer is spoiled; if she goes to the well, the water becomes murky; if she visits a wine cellar, the wine is spoiled; if she visits the bakery, the bread sours.

She does not have her hair cut, nor have another dress her hair during pregnancy, for in the first instance the hair will not grow, and in the second instance the hair falls.

If a nut tree is to become very fruitful, a pregnant woman is to take the first nuts from the tree.

A woman dying in the pregnant state, her scissors, needlecase, thread and thimble must be buried with her; otherwise she will return for them.

When the pregnant woman has washed clothing and immediately thereafter upsets the vessel used, she insures herself an easy labor.

So long as the woman remains in bed, nothing is loaned from the house, for during that period things may be bewitched.

When one asks after the mother and child, the answering person always adds, "God protect them," for the questioner may be a witch, and can be disarmed in this way only.

When a knife, upon the blade of which nine crosses have been imprinted, is stuck over the door of the lying-in room, the woman cannot be bewitched.

If the new mother believes she is disturbed by witches, she has a dirk or open knife put into the bed or cradle, point up, that the witch shall be transfixed when she pounces upon the mother of the child.

The pregnant woman who crawls under the neck of a horse, must carry her child a year; she can, however, release herself from this bond by letting a horse feed from her apron.

If, during the period of gestation, the woman has strange desires, she must look at her finger nails or the sky, or she must seize a certain part of the body, that the child will have no birth marks.

In some villages, after the burial of a woman dying in pregnancy, a small dish and a spoon is laid for six weeks upon the bed, that she may rest peacefully. It is believed that she is there unseen and eats.

There is also the belief that no pregnant woman should pass under a wagon pole; otherwise the child will come to the hangman.

When a woman is unfruitful, her naked body should be wrapped in a table cloth that has done service at a baptismal feast.

One should not permit a child to be irritated or excited before the first year; if so it will surely have freckles.

When the grandparents leave the room on the way to the baptism, they say, "We take away a heathen and bring back a Christian."

On the christening day, the godparents must wear clean shirts, turned inside out. No witch can then reach the child.

If the child-bearing woman follows a funeral procession, her child will be timid.

The sponsors must eat of every dish at the feast; if not, the child will forever have a distaste for the neglected dishes.

In Italy small, fine cut glass bottles are sold which contain a splinter, richly mounted, from the coffin of St. Aloysius. The woman in labor holds one of these bottles in her hand, that the labor be rendered easier. If she holds the bottle in the right hand, the child will be a girl; if in the left hand, a boy is born.

One may see such finely wrought "Aloysius bottles" in the vicinity of Salzburg, and in some of the best families in Vienna such bottles, not at all lacking in artistic worth, may be seen among the heirlooms.

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EDITORIAL.

TYPHOID FEVER.

Washington City has been warned by the district board of health of the danger of an epidemic of typhoid fever. The source of danger is at Mount Savage, near Cumberland, Md., where one hundred and twenty cases of typhoid fever exist. The town is drained by a creek that empties into the Potomac, the water supply of the capital city. It seems to be a position well taken, that typhoid fever is essentially a rural disease and that its propagation is in general from the country to the town, rather than from the town to the country. Pollution of water and milk, the two most prominent factors

in the dissemination of typhoid fever should be guarded against.

The original plague spot, the privy, is seldom cleaned and its vault (where one exists) seldom or never disinfected. As a precaution against spreading of typhoid fever the privy should be located carefully, screened so as to keep away flies and disinfected daily.

FOOD SUBSTANCE IN WINE.

That glycerin and cream of tartar, which are found in wines, are foods, has long been recognized. A third substance, a food of great value, has been recently added, namely, a lecithin, one of a class of substances found to be especially promotive of rapid growth. Dr. Varenne, of the Paris Faculty of Medicine, says this valuable vital principle was discovered in the yolk of egg, which contains it in large proportions. Yolk of egg is, as every one knows, a food of the first order, and Gobley, the celebrated chemist, has published numerous interesting papers about it. There are vegetable as well as animal lecithins. The lecithin that seems to be most widespread is "steric lecithin," whose chemical name is "distearo-glycerophosphate of trimethyl-hydroxyl-amine-amonium." This lecithin is also met with in milk, corn, peas, oats, etc. Lecithin exists in very appreciable quantities in natural wines, and the more as these are richer in alcohol. Here, however, the distinction must be made that only wines rich in alcohol by fermentation contain lecithin. Weak wines artificially strengthened by the addition of alcohol after fermentation do not contain it in appreciable amount. Again, as lecithin alters at about 50°C, the so-called pasteurized wines lose this principle during heating. Pink and white wines, which have fermented without the pulp and stones, contain no lecithin. Hence the conclusion that wine is a real food, not only from the alcohol, glycerin and cream of tartar it contains, but especially from its lecithin.

OBITUARY.

Charles Thomas Varnon, M. D., graduate of the medical department of the Missouri State University,

1876, died at his home in Mexico, Missouri, July 24, at 10:30 P. M., of chronic Bright's disease. Dr. Varnon was born in Nicholas county, Kentucky, November 3, 1850. He began the practice of medicine at Thompson Station in 1876 and moved to Mexico in 1891, where he continued to practice up to the time of his fatal illness. He was president of the Audrian County Medical Society, coroner of

Audrain county and health commissioner for the city of Mexico, Missouri. He leaves a widow and one daughter.

COUNTY SOCIETY NOTES.

BOONE COUNTY MEDICAL SOCIETY.

Dr. R. S. Austin, President.
Dr. Guy L. Noyes, Vice-President.
Dr. J. M. Fisher, Secretary-Treasurer.
Dr. J. E. Thornton, Delegate.

The Boone County Medical Society held its regular meeting in Hallsville, August 1st, Dr. R. S. Austin in the chair. A paper on "Typhoid Fever," read by Dr. J. E. Jordan, was discussed by Drs. McComas, Gentry, Newman, Fisher and Miller.

Dr. Walter McNab Miller reported on the microscopic findings of an epithelioma removed from a young man's left tragus, by Dr. Guy L. Noyes.

Cases of osteomyelitis of the temporal bone, tumor of spermatic cord and of heart lesion were presented and discussed at length.

Dr. Wm. E. Angell, Dr. Guthrie and Dr. Haas were elected members of the society.

The next regular meeting will be held at Sturgeon.

J. M. FISHER, Reporter.

CALLAWAY COUNTY MEDICAL SOCIETY.

Dr. D. H. Young, President.
Dr. N. F. Baker, Vice-President.
Dr. W. M. Bayliss, Vice-President.
Dr. J. F. Harrison, Secretary.
Dr. G. D. McCall, Treasurer.

The Callaway County Medical Society met in regular monthly session August 11th, at the Hospital for the Insane, Fulton. Officers for the ensuing year were elected as follows: Dr. D. H. Young, President; Drs. N. F. Baker and W. M. Bayliss, Vice-Presidents; Dr. J. F. Harrison, Secretary, and Dr. G. D. McCall, Treasurer.

Dr. Baker read an interesting paper on "Needed Legislation in Reference to Patent Nostrums." The essayist spoke of the evil of the promiscuous sale and use of nostrums containing so large a percentage of alcohol as most of them by analysis have been found to contain. He advocated the enactment of stringent laws compelling the official analysis and publication of formulæ, official inspection and regulation of the sale of all patent medicines, so-called cures and discoveries, proposed for medical use. The paper was generally discussed by members present and its sentiment endorsed. Upon motion the society adjourned until the September meeting. MARTIN YATES, Reporter.

CLAY COUNTY MEDICAL SOCIETY.

Dr. L. J. Jones, President.
Dr. John J. Rice, Vice-President.
Dr. F. H. Matthews, Secretary.
Dr. J. H. Rothwell, Treasurer.
Dr. H. Rowell, Delegate.

The regular August meeting of the Clay County Medical Society was held in Judge Emerson's Court room at Liberty, Monday, August 29th, Dr. L. J. Jones in the chair. Dr. R. E.

Sevier read a very instructive paper on "The Various Manifestations of La Grippe." Dr. J. T. Marsh opened a general discussion on the subject of typhoid fever. Dr. H. E. Pearce's remarks on surgical sequelæ were especially interesting and instructive.

F. H. MATTHEWS, Reporter.

PLATTE COUNTY MEDICAL SOCIETY.

Dr. A. S. Herndon, President.
Dr. R. P. Davis, Vice-President.
Dr. G. C. Coffey, Secretary,
Dr. J. A. Baldwin, Treasurer.
Dr. S. Redmond, Delegate.

The regular monthly meeting of the Platte County Medical Society was held at Weston, Wednesday, September 7th, Vice-President R. P. Davis presiding. The minutes of the previous meeting were read and approved. Dr. Herndon being absent, his paper, "Why We Should Maintain a Medical Society," was read by the secretary. The doctor maintains that each honorable physician in the county, for the good of his patients, his profession and himself, should be a member of his county society, rid himself of all feeling of petty jealousy, selfishness and bigotry, keep abreast of the times and gain sufficient social and political influence to enable the society, the state association and national association to bring about needed reforms and to rid the country of patent nostrums, pretenders and quacks. Dr. S. Redman, in a paper entitled "Home Treatment *versus* Climate in Tuberculosis," stated that the only advantage climate can have is in enabling the patient to sleep out in the pure air and that can be arranged for at home. Fresh air, nutrition and the destruction of the infected sputum are the keynotes to treatment. Dr. E. W. Murray presented a very instructive discourse on "The Use and Abuse of Spectacles." Dr. Dinwiddie, of Camden Point, was elected a member of the society.

GRUNDY C. COFFEY, Reporter.

CHARITON COUNTY MEDICAL SOCIETY.

Dr. M. B. Austin, President.
Dr. Harry Tatum, Vice President.
Dr. C. A. Jennings, Secretary-Treasurer.
Dr. J. D. Brummall, Delegate.

The Chariton County Medical Society met in the office of Dr. J. F. Welch, Salisbury, Thursday, August 25th, Dr. M. B. Austin in the chair. Dr. J. D. McAdam, of Prairie Hill, read a paper on "Uniform Medical Fees." The paper was favorably received, but the prevailing opinion was that the time is not yet reached for the adoption of a uniform scale of medical fees. At the next regular meeting papers will be read by Dr. C. H. Temple on "Proprietary Medicines," and Dr. H. E. Kirkpatrick on "Inflammatory Rheumatism in Children."

C. A. JENNINGS, Reporter.

CASS COUNTY MEDICAL SOCIETY.

Dr. T. W. Adair, President.
Dr. R. D. Ramey, Vice-President.
Dr. J. S. Triplett, Secretary-Treasurer.
Dr. M. P. Overholser, Delegate.

The Cass County Medical Society met in regular session in Harrisonville, September 1st, Vice-President R. D. Ramey presiding. The minutes of the previous meeting were read and approved. Drs. F. W. Foster, of

East Lynne; M. H. Rhodes, of Austin, and J. B. Brierly, of Gumm City, were elected to membership.

Dr. W. F. Chaffin, of Raymore, read a timely and instructive paper on "Cholera Infantum," in which he considered at some length the etiology, pathology, symptoms, prognosis and treatment. Decomposition of albumens in the alimentary canal not alone gives the characteristic odor to the stools, but furnishes an excellent culture medium for the Shiga dysentery bacillus, or whatever other bacteria may be the immediate cause of the trouble. Error in diet, lack of hygienic surroundings, careless handling of food stuffs, especially milk, together with the relaxation and lowered vitality incident to the heat of the day and the chilling of the body while uncovered during sleep, are predisposing factors of great importance. There is present, congestion not only of the stomach and intestines with decided catarrh, but of the sympathetic nervous system, causing marked alteration of pulse, temperature and respiration. The kidneys are usually congested, the brain anemic, and broncho-pneumonia is a frequent complication. The condition is characterized by stomach and bowels in constant rebellion, stools of musty odor, unquenched thirst, restlessness or stupor, cold hands and feet, clammy, shrivelled skin and thready, rapid pulse. The prognosis is unfavorable. The treatment consists in cold applications to the head, immersion in hot water (about 110°) to relieve the internal congestion, shaved ice internally until the stomach will tolerate fractional doses of aconite, which is given in brandy hourly until the temperature is below the danger point. Pure sulphocarbolate of lime soda and zinc of each, one-half to one grain every two to four hours, until the stools are odorless. Enemata of warm physiological saline solution with borate of soda replenishes the depleted tissues in a wonderful manner. Intestinal antisepsis is imperative in the later treatment or relapse is sure. No nourishment should be given until the temperature subsides and the vomiting and purging have ceased. An hypodermoclysis, a pint every hour, may be necessary as a last resort in the more desperate cases.

Dr. R. P. Walker read a paper entitled "What Should We Prescribe," in which he forcibly condemned the custom of indiscriminately prescribing proprietary medicines, not alone because in most cases we do not know for certain the formulæ, and hence cannot count on the therapeutic results we wish, but because they are expensive to the patient, and then, too, they lessen the esteem in which the physician is held by the patient, who thinks he is being given "patent medicine." The physician should familiarize himself with electro-therapeutics, x-ray work, hydrotherapy, massage, etc., not only because of their value when rightly applied, but that there may be no excuse for the existence of such fakirs, empirics and charlatans as thrive by the abuse of these branches of therapeutics. The paper was well received and resulted in one of the most enthusiastic general discussions in the history of the society. Drs. W. P. Chaffin, of Raymore; G. W. Farrow, of East Lynn; M. P. Overholser, of Harrisonville;

I. Smith, of Austin, and R. D. Ramey, of Garden City, manifested especial interest in the discussion.

A quiz on the "Anatomy of the Lungs, Mensuration, Types of Respiration, Vocal Fremitus and Dyspnœa" was conducted by Dr. J. S. Triplett, of Harrisonville. That the subject had been thoroughly reviewed was shown by the readiness with which the questions were answered. The quiz will be continued at future meetings. The society adjourned to meet at Harrisonville, Thursday, December 1st.

J. S. TRIPLETT, Reporter.

HOWELL COUNTY MEDICAL SOCIETY.

Dr. J. C. B. Dixon, President.
Dr. J. W. Bingham, Vice-President.
Dr. H. C. Shuttee, Secretary.
Dr. H. A. Thompson, Treasurer.
Dr. H. C. Shuttee, Delegate.

The Howell County Medical Society held its regular bi-monthly meeting at K. P. hall, West Plains, September 1st, Dr. J. C. B. Dixon in the chair. Dr. J. C. B. Davis, of Mountain View, read a paper on "Mercury and Iodide of Potassium." He gave the various therapeutic indications for the remedies and deplored the tendency of the day to discard old, well proven remedies for the new and untried. The paper was generally discussed and approved. Dr. A. H. Thornburgh read a paper entitled "Pain," giving the various kinds of pain, location and significance.

At our July meeting the business side of the practice of medicine was discussed. Dr. H. J. Rowe, of Willow Springs, read a paper on "The Duty of Physicians to Each Other." and Dr. D. J. Nichols one entitled "The Physician as a Financier." There was a general consensus of opinion that doctors pay too little attention to collections and do too much charity work.

H. C. SHUTTEE, Reporter.

CALLAWAY COUNTY MEDICAL SOCIETY.

Dr. C. H. Christian, President.
Dr. D. H. Young, Vice-President.
Dr. M. Yates, Secretary.
Dr. G. D. McCall, Treasurer.
Dr. C. H. Christian, Delegate.

The Callaway County Medical Society held its regular meeting at Fulton, September 8th, Dr. C. H. Christian presiding. Drs. J. W. Berry, of Reform, H. I. Owen, of Fulton and E. E. Brummer, of Fulton, were elected members of the society. Dr. Brummer, Pathologist to the State Hospital for the Insane, read an interesting paper on "Post Mortem Examinations." Dr. Yates read a paper on the "Treatment of Tuberculosis." A general discussion followed. The society adjourned to meet in October. The outlook for the future of the society is very encouraging indeed, there being at present nineteen enthusiastic members.

M. YATES, Reporter.

BOONE COUNTY MEDICAL SOCIETY.

Dr. R. S. Austin, President.
Dr. Guy L. Noyes, Vice-President.
Dr. J. M. Fisher, Secretary-Treasurer.
Dr. J. E. Thornton, Delegate.

The Boone County Medical Society met in regular session at Sturgeon, September 12th, Dr. A. W. McAlester acting as chairman in the absence

of both the president and vice-president. Some of the most interesting clinical cases ever brought before the society were presented, after which Dr. E. N. Gentry read a paper "Symptoms and Treatment of Pneumonia."

Dr. Woodson Moss opened the discussion of the paper. Papers on tuberculosis were read by Drs. Woodson Moss, W. McNab Miller and A. W. McAlester. Drs. J. F. Keith, W. A. Robinson, W. D. Carr and A. J. Campbell were elected to membership. The society adjourned to attend a reception and banquet tendered them by the physicians of Sturgeon.

J. M. FISHER, Reporter.

MARION COUNTY MEDICAL SOCIETY.

Dr. J. S. Howell, President.
Dr. Richard Schmidt, Vice-President.
Dr. F. Janet Reid, Secretary-Treasurer.
Dr. Thomas Chowning, Delegate.

Marion County Medical Society met in regular monthly session Friday, August 5th, Dr. J. S. Howell, presiding.

Dr. F. W. Bush presented a paper on "Puerperal Eclampsia." The doctor related a case in point in which to control the convulsions he gave gr. ½ of morphine hypodermically, while he promptly delivered the child. Both mother and child did well, and the mother, who has since borne several children, has never had a recurrence of the convulsions.

Dr. J. N. Baskett reported a case of eclampsia gravidarum which failed to respond to the usual treatment, the case ending fatally.

Dr. Thomas Chowning reported a case in which a provisional diagnosis of appendicitis had been made, the only apparent negating symptom being an active diarrhœa. The patient, a twelve-year-old boy, had eaten very heartily of green apples.

Dr. J. N. Coons, retired, was elected to honorary membership in the society. Dr. Glahn, recently located in Hannibal, was requested to get a transfer from the St. Louis Medical Society. The society adjourned to meet again in September.

H. L. BANKS, Reporter.

BUTLER COUNTY MEDICAL SOCIETY.

Dr. W. E. Highfill, President.
Dr. A. W. Davidson, Vice-President.
Dr. J. J. Norwine, Secretary.
Dr. C. Jones, Treasurer.
Dr. Chas. F. Greene, Delegate.

The Butler County Medical Society met in regular session in the city council chambers, Poplar Bluff, August 26th, President W. E. Highfill, presiding. The attendance was most gratifying, there being but one member absent. Drs. J. A. Atkisson, of Morehouse, and Victor Caldwell, of Poplar Bluff, were elected members.

Dr. J. J. Norwine reported a case of congestive chill, male, twenty-eight years, previous health good, family history good. Patient came to Poplar Bluff from Mexico, Mo., six months ago. Within two and one-half hours of the attack he was profoundly comatose, eyes markedly divergent, extremities and surface cold and bathed in perspiration, pulse small, easily obliterated by pressure and irregular; temperature 97°. He was given strychnine sulphate gr. 1-30 every hour for four hours, inunctions of

quinine, and the whole trunk was encased in a mustard plaster. In two hours the temperature was 98°, when fifteen grains of calomel were given, followed by a saline. Recovery without another chill under elixir of iron, quinine and strychnine was rapid. This is the third case so treated by the doctor with happy results.

The president appointed as censors, Drs. A. Windsor, Dewitt Eskew and W. A. Davidson; as committee on public health and legislation, Drs. J. J. Norwine, B. C. Jones and C. W. Williamson. Much interest is manifest in the society in the matter of professional ethics and the elevation of the standard of medicine.

My friend and assistant councillor, Dr. Ira A. Marshall, of Ironton, organized Wayne county last week and before the next meeting of the State Association Southeast Missouri will be in line.

J. J. Norwine, Reporter.

HOWARD COUNTY MEDICAL SOCIETY.

Dr. Paul C. Smith, President.
Dr. T. J. Payne, Vice-President.
Dr. C. W. Watts, Secretary-Treasurer.
Dr. V. Q. Bonham, Delegate.

The Howard County Medical Society met in regular session at the office of Dr. W. S. Thompson, of Armstrong, Dr. Paul C. Smith presiding. Cases were reported as follows: By Dr. J. Y. Hume, a case of septicemia, resulting from infection of a lacerated hand; by Dr. C. W. Watts, a case of tubercular infection of the leg; by Dr. W. S. Thompson, a case of senile gangrene of the toes; by Dr. J. Y. Hume, a case of fracture of the skull. In all of these reports the treatment was carefully outlined. The society was royally entertained by the citizens of Armstrong.

C. W. Watts, Reporter.

BUCHANAN COUNTY MEDICAL SOCIETY.

Dr. W. T. Elam, President.
Dr. J. B. Reynolds, Vice-President.
Dr. Chas. Wood Fassett, Secretary.
Dr. J. J. Bansbach, Treasurer.
Dr. O. B. Campbell, Delegate.

The Buchanan County Medical Society held its first regular meeting after the summer recess on September 2d, with an average attendance. After reading and approving the minutes of the preceding meeting, several applications for membership were acted upon favorably. A resolution was adopted limiting the membership strictly to physicians of Buchanan county. This was done with the idea of encouraging organization in one or two of the neighboring counties which, at present, are without county societies. Dr. W. B. Deffenbaugh was the choice of the society for second vice-president.

An interesting clinical case was presented by Dr. Elam. The patient was a boy who was operated upon for an appendix abscess. The cæcum was found perforated. The perforation was closed and drainage instituted. A second operation was done three weeks later for fecal fistula and two new perforations were found—one in the distal two inches of the ileum, the other in the colon near the ileo-cæcal valve. An end-to-end anastomosis was accomplished with a Murphy button. Recovery. Unusual cases were reported by Drs. Porter and Doyle.

Dr. J. M. Bell read the paper of the evening, entitled "Gastroptosis." The subject was well handled from the point of view of practical medicine and received a generous round of discussion. The subject for general discussion—"The Office Treatment of Hemorrhoids"—was presented by Dr. McGill, who has recently had the opportunity of observing the work of Dr. Gant.

From the present outlook it would seem that the membership of the society will be increased considerably this year, as much more interest is manifested than formerly.

L. A. TODD, Reporter.

McDOWELL DISTRICT MEDICAL SOCIETY.

Dr. John D. Seba, President.
Dr. C. A. Wood, Secretary.

The McDowell District Medical Society met at Owensville, June 25, 1904, in the office of Dr. J. W. Nieweg, with the president, Dr. J. D. Seba, in the chair. After the reading of the minutes of the previous meeting, Drs. F. Auf der Heide and H. G. Isenberge were elected to membership in the society. A paper was read by Dr. J. W. Nieweg, entitled "The Tongue as a Diagnostic Guide." After a free discussion of the essay by all present, various other scientific subjects were discussed.

The next regular meeting will be held at Bland, Mo., October 27, 1904, when the following programme will be rendered: "Diphtheria," Dr. F. Auf der Heide; "The Proper Use of Forceps in Obstetrical Practice," Dr. J. D. Seba; "Tuberculosis," Dr. J. W. Nieweg; "Pneumonia," Dr. J. J. Ferrell; "Presentations and Versions," Dr. C. A. Wood. Special efforts are being made to make the next meeting one of the best in the history of the society.

J. W. NIEWEG, Reporter.

AUDRAIN COUNTY MEDICAL SOCIETY.

Audrain County Medical Society met in Dr. Cave's office, September 5th, and was called to order by Vice-President M. E. Crawford. Minutes of the previous meeting were read and approved. As the society has not met regularly through the summer months, no set programme was rendered, but a general discussion was indulged in on various subjects. The applications for membership of Drs. E. A. Hicks and Paul E. Coil, of Mexico, and Herbert Lanier, of Martinsburg, were received and referred to the board of censors. Dr. R. A. Berrey was elected president to fill the vacancy caused by the death of Dr. C. T. Varnon. Dr. E. S. Cave was appointed to read a paper at the next regular meeting. On motion the society adjourned to meet October 3d.

C. A. ROTHWELL.

NEWS ITEMS.

It is announced that the New York University has added a fifth year to the course of instruction in the medical department. The arrangement is to go into effect at the session of 1905–1906. For the present the fifth year of instruction is to be elective, but it is intimated that it may soon be made obligatory.

The organized profession in Germany has issued a circular warning youth against the medical career. It points out the overcrowding of the profession in comparison to the population, and depicts the material depression prevailing in its ranks from the lack of restrictive legislation against quacks and of regulation of the sickness insurance societies.

The candidates for the two vacant places of corresponding members in the medical section of the French National Academy of Medicine were Ronald Ross of Liverpool, our own Weir Mitchell, Mosso of Turin, Ehlers of Copenhagen, Unna of Hamburg and Pick of Prague. Ross and Mitchell were elected by large majorities at the meeting on July 19.

Dr. George F. Shrady, after nearly forty years of continuous service, has resigned the editorship of the *Medical Record*, Dr. Thomas L. Stedman, who has been associate editor for nearly twenty years, being appointed in his place. The personnel of the editorial staff, it is said, remains as before Dr. Shrady's resignation.

Frank Konig, of Berlin, has just witnessed the completion of the model surgical clinic erected for him at the Charite, and now he retires, as he has passed the age of seventy-two. His successor is already announced, A. von Eiselsberg, of Vienna, Billroth's favorite pupil. He has already been connected with a German university, having been professor of surgery at Konigsberg, 1895 to 1901, after having served a term at Utrecht.

It is announced that Dr. William Osler, of Baltimore, has been appointed regius professor of medicine in the University of Oxford, and we congratulate the ancient university on the acquisition of so keen a clinician and so genial a man. We are not sure that his new field will afford greater scope for his remarkable abilities than he has found in Montreal, Philadelphia and Baltimore, but we feel certain that Oxford will be the gainer by his accession to its medical faculty.

San Francisco is to have a great library of medicine and surgery, one that will be surpassed in this country only by the collection of medical and surgical works of the offices of the surgeon general of the United States in Washington. The library is to be built under the bequest made by Pauline C. Lane, who was the wife of the late Dr. L. C. Lane. It is to be known as the Levi Cooper Lane Library of Medicine and Surgery, as a memorial to the eminent surgeon.

The health commissioner of St. Louis is taking active steps to compel property owners of the city to cut the weeds on their lots. Failure to do this has resulted in about one hundred and fifty property owners being summoned to appear before various police courts. The cases will be prosecuted for the city. Under a law upheld by the supreme court last winter, permitting weeds to grow on vacant lots is punishable by a fine of from ten dollars to fifty dollars.

At the conference arranged by the Chicago Woman's Club on Women in Industrialism, Dr. Lucy Waite, of Chicago, reported 4,376 women listed in the medical societies. New York had the largest number. Illinois came next with 239; of these, 51 were giving instruction in medical colleges in Chicago. An investigation as to the fees of 76 women physicians, graduates from a certain college, disclosed that 10 received annual incomes from $3,000 to $4,000; 5 received from $4,000 to $5,000; 3 from $5,000 to $10,000, and 15 from $15,000 to $20,000.

Cheinisse is not prepared to admit that the mosquito is the sole cause of malarial and yellow fever. He thinks the thickness of the skin of indigenous races does not sufficiently explain their immunity, since they are subject to filariasis. He states that the geographical distribution of anopheles is not exactly that of malaria. Epidemics of malaria have occurred in Algiers without the presence of mosquitoes. The writer is inclined to believe those who consider the fever caused by mosquito bites to be a mere inflammatory bilious fever and not the true yellow fever. He attributes the disappearance of yellow fever from Cuba to quarantine solely, and believes that soiled linen may communicate the disease.

The Austrian emperor, Francis Joseph, has just laid in Vienna the foundation stone of a new hospital, which is likely to be one of the most perfect institutions of its kind in the world. It will replace the famous Allgemeine Krankenhaus, in the Alserstrasse, and will be the largest hospital in Europe. It will consist of forty pavilions, as they are to be called, of which, however, the eighteen clinical institutes will be so many separate large hospitals, with the best possible arrangements for teaching purposes, demonstrations, etc. There will be room in each operating amphitheater for two hundred and fifty students. In the clinical institutes for infectious diseases the patient will be separated from both professor and students by a glass screen. Every clinical institute will have a large ambulatorium, and in each there will be flat roofs, where patients may lie in the open air whenever weather and temperature allow it. The whole area of the new hospital is nearly sixty acres, this being more than twice the area of the present Krankenhaus, but there will be fewer beds. About four-fifths of the total area, or forty-eight acres, will be turned into gardens. It will take ten years to finish the institution, which will cost about $10,000,000.

The fourth Pan-American Medical Congress, which was to have convened the latter part of December of this year at Panama, has been postponed until the first week in January. This was done at the request of many physicians who wished to attend the congress, since they desired to be at home during the Christmas holidays. The delegates from this side of the continent will leave on Tuesday, December 27, if they go from New York by the regular Pacific Mail lines, or at other dates if they go by way of New Orleans or Jamaica. The dates of sailing from the Pacific coast have not yet been ascertained. The congress will be held from the 4th to the 7th of January. The officers of the congress, appointed by President Amador, of the Republic of Panama, are: Dr. Julio Icaza, Dr. Giro Uriola, Dr. J. Calve, Dr. Carlos Cooks, Panamanians; Dr. Gorgas, chief of the Panama Canal Sanitary Commission; Drs. Carter and Ross, Americans; Dr. Manuel Corales, Cuban; Dr. M. Stern, English, and Dr. Oduber, Dutch. This congress bids fair to be the most successful Pan-American Medical Congress that has ever been held, on account of the central situation of Panama and its easy approach from both sides of North America, Mexico and the Central American republics, as well as from the countries on the north and west sides of South America. There will be but four sections at this congress, surgery, medicine, hygiene and the specialties.

"At the annual meeting of the National Temperance Society, held at Ocean Grove, New Jersey, in June, resolutions were adopted calling upon the board of managers of the society to memorialize congress not to issue any patent or proprietary rights to any one for any remedy, medicine, 'cure' or other compound containing alcohol, opium or other narcotic drug, and to make it obligatory that all proprietary or patent medicines shall be put up in bottle or package with a label, on which are printed the ingredients of the preparation."—*Medical Record*, July 30, 1904.

Jenner, an obscure English physician, introduced vaccination into his country January 21, 1799. When its merits were known, Jenner became famous. He wrote "Observations on the Natural History of the Cuckoo," also two works on the "Cow Pox."

Within this tomb hath found a resting place
The great physician of the human race.
Immortal Jenner! whose gigantic mind
Brought life and health to more than half mankind.
Let rescued infancy his worth proclaim,
And lisp out blessings on his honored name;
And radiant Beauty drop her saddest tear,
For Beauty's truest, trustiest friend lies here.

—Epitaph placed upon Jenner's tomb.

George Newton Lantz, M. D., University of Louisville, 1900, died at his home in Brookfield, Missouri, September 2, of Bright's disease. Dr. Lantz was President of the Linn

County Medical Society, member of the North Missouri Medical Society, member of the Grand River Medical Society, member of the Missouri State Medical Association, and member of the American Medical Association.

ABSTRACTS.

Elastic Ligature in Intestinal Fistulæ.—Dr. Theodore A. McGraw (*The Journal of the Michigan State Medical Society*) discusses at some length the treatment of intestinal fistulæ by the elastic ligature. He says that although many cases of fistulæ will close spontaneously or with comparatively slight operations, yet cases are frequently met with where repair of the injured bowel can be accomplished only by methods which are the most difficult and dangerous of all surgery.

A clear understanding of the pathological conditions with which they are associated is necessary to meet these cases successfully. The most common causes which give rise to destructive ulceration or gangrenous inflammations of the bowel are obstructions (from constrictions, volvulus, and other causes), suppurative appendicitis, tuberculous deposits, typhoid ulceration, and injuries to the abdomen. The resultant pathological conditions of severe inflammation that accompany all septic insults to the peritoneal cavity are similar and, excepting tubercular cases, nearly identical.

When the cases are operated on early and the patients recover from the condition of imminent danger, there remains the formidable false anus, while within the abdomen the inflammation either disappears or assumes a chronic character. In either case extensive adhesions occur, the bowels becoming matted together and extremely friable, while the peritoneum becomes covered with a mass of granulations. As the granulations disappear the adhesions become so firm, the bowel walls so blended together, that separation is impossible. The friability of the gut wall persists and commonly there occur more points of obstruction. Success in relieving thest conditions must come, if at all, by a careful study of the obstacles which we have to contend with in each individual case. If gangrene has occurred the patient is nearly moribund from pain, shock, and septic absorption, and measures adopted must be such as take the least time and make the least demand on the patient's strength. An end to end anastomosis is exceedingly hazardous, while fastening the bowel in the wound and permitting it to discharge through a false anus, means still another dangerous operation for the relief of the injured bowel.

Some three years ago Dr. McGraw proposed to obviate the necessity of a second operation by a simple method of procedure to be carried out at once before the bowel was fastened in the wound. It was simply to draw the bowel out of the wound until a portion was reached that was nearly normal in appearance, and then to make a lateral anastomosis between the two limbs with an elastic ligature. The idea was to provide a passage for the

contents of the bowel and thus enable the false anus, no longer needed for the evacuation of the faeces, to heal. After the ligature had been applied the bowel was to be disinfected and all that seemed in condition to recover pushed back into the peritoneal cavity. That part which was mortified with that which appeared dangerously near mortification was to be fastened outside the abdomen by stitching it to the abdominal wall. The immediate result of such a procedure, if the patient recovered, would be the relief of the distended bowel by means of the false anus and the gradual subsidence of the internal congestion. When that had taken place and the ligature had cut through, it was hoped that the fistula would spontaneously heal, or should that fail to occur could be made to heal by inverting the ends of the protruding bowel, a simple operation of little danger.

Dr. McGraw reports two cases, both successful, in opening the passage between the afferent and efferent bowel, and in obviating the passage of faeces through the false anus.

Decapsulation of the Kidneys for the Cure of Chronic Bright's Disease—Medical Aspect of.—Chronic Bright's disease in its development constitutes a diseased condition of the entire system. It is a disease of very gradual development, and in the great majority of cases has existed for months and years before the patient comes under observation. It is produced by a chronic toxæmia, either systemic or infective in origin, which produces coincidentally, as a result, widespread arterial and cardiac degenerative changes, which, being once established are permanent, and which in their development eventually constitute the most threatening element of the disease.

General edema or anasarca in chronic renal disease is in many instances in great measure a cardiac dropsy, brought about by advancing myocardial degeneration. It is occasionally so in chronic parenchymatous nephritis, and almost invariably so in chronic interstitial nephritis. It may be stated that, in like manner, developing anuria and uremia in chronic nephritis may be largely cardiac in production, the functional inadequacy of the kidneys having its inception in the fall of blood-pressure incident to circulatory failure. In the latter stages of chronic nephritis, of whatever character, the case is apt to take on these cardiac aspects, which virtually convert the therapeutic problem into a question of sustaining a failing heart.

Albuminuric retinitis must be looked upon as one of the terminal symptoms of chronic nephritis. The concordance of opinion places a limit of two years upon the prognosis after development of this complication. The statistics gathered by Suker of cases operated on show that in place of prolonging this limit of expectancy, operation has a decidedly contrary effect. It is to be borne in mind that chronic nephritis is a disease of slow and spasmodic development. It is well to realize its exacerbations and remissions, so as to avoid the error of mistaking remissions for cures. The mere fact that the general condition of the patient improves somewhat after decapsulation does not establish

the validity of the operation, for hygiene and rest will do the same for the patient to a remarkable degree in many cases. As the factors of hygiene and rest are invariably associated with the surgical procedure, it is possible that the resulting benefit may, to some extent, accrue from those sources.

The results of experimentation demonstrate that, within a period of three months and a half after decapsulation a new, and in most cases a tougher, fibrous envelope has taken the place of the original capsule. This fact may account for the many relapses and deaths after that period in cases operated on, and in chronic cases, at least, it narrows the prospect of improvement to a period of months. —*Monthly Cyclopedia*, July, 1904.

The Bacillus of Leprosy, and Leprolin.—In a letter from its Rangoon correspondent, the *London Times* gives in some detail the account of the discovery of the bacillus of leprosy by Captain Rost, of the Indian Medical Service. We take this to mean the successful cultivation of the organism. Of greater interest is the claim that Captain Rost has succeeded in producing a curative serum known as "leprolin," that possesses remarkable healing properties. It appears to act equally well upon all varieties of the disease. Sensation is restored to anesthetic areas, the color becomes normal, ulcers and nodules disappear. Four cases are reported cured. One patient, a Burman, who had anesthetic leprosy of the legs, with ulceration of the feet, for five years, appeared completely cured in ten days. In India the treatment is being tried in some thirty localities, and in Burmah more than one hundred cases are receiving serum, which is injected usually at intervals of a fortnight. Sale is administered internally as an adjunct. This report lacks scientific confirmation, and until such is received we must regard it as a newspaper statement that at least appears overdrawn. It is said the four patients who had been cured were exhibited at the local branch of the British Medical Association.—*American Medicine.*

Olive Oil in Diseases of the Stomach and Duodenum.—P. Cohnheim has employed large doses of olive oil in more than thirty cases of pyloric stenosis, gastric ulcer, pyloric fissures and their sequels, and reports concerning these cases in detail. His method of procedure is as follows: Into the empty stomach, which, if necessary, has been washed out, he injects by means of the stomach tube 100 cc. to 150 cc. of warm olive oil; the patient then lies on his right side for about a half hour and fasts for another half hour; if the pains recur during the day 50 cc. more are given toward evening. As the patient improves he takes a wineglassful an hour before breakfast and from one to two tablespoonfuls an hour before dinner and supper. In some cases Cohnheim gives milk of almonds instead of olive oil. He summarizes his results as follows: Gastrectasia, the result of pyloric fissure or ulcer, is cured by large doses of olive oil in a short time. Gastrectasia, due to organic pyloric stenosis, gives no symptoms so long as the patient lives carefully and uses large doses of oil:

the oil acts as a mechanical lubricant. Relative stenosis associated with pylorospasm and hypersecretion for hours after meals are helped quickly. The spasm of carcinomatous stenosis is improved by oil very much. The painful spasms of pyloric ulcer disappear very soon as long as no complications exist; the oil checks the spasms, lubricates the surfaces, increases nutrition and prevents pain. It is not associated with unpleasant side effects. It serves to differentiate nervous from organic strictures, as the former are not improved by it. It prevents secondary gastrectasia in many cases and protects against relapses. It should always be tried before resorting to operation.—*American Medicine.*

A French Impression of American Hospitals.—It is always interesting and generally profitable to read what foreign visitors have to say about us. The captiousness so often displayed by them in bygone years has now largely disappeared, and their criticisms are as a rule wholesome. Few recent visitors have manifested truer impressions or shown more justice in comment than Dr. J. L. Faure, whose article appears in the *Presse Medicale* for July 27. His visit was not wholly confined to the United States, for he enthusiastically praises a new hospital, not quite completed, that he saw in the City of Mexico.

He declares that the most beautiful operating theater that he has ever seen is that of the new Mount Sinai Hospital in New York, but he implies that some needless expense is shown in it. He thinks that our operating tables, as a rule, are not so good as those used in France, for they do not admit of such convenient change of the patient's posture, especially in pelvic surgery. He condemns our instruments as too heavy and clumsy, declaring that it takes real artists and not machine workers to fashion delicate instruments. He admires the plan of private rooms for pay patients, also the special hospitals for persons with acute infectious diseases.

He is fully appreciative of the excellence of American nurses. They are generally, he says, drawn from a superior class of the population, and their education, both preliminary and professional, is more advanced than in his own country; but he thinks that too many of them are immediately employed in an operation, and, in general, too many assistants, thus increasing the risks of septic infection. While he finds that our surgeons and nurses asepticize their own persons faultlessly, he doubts if the patient is as thoroughly asepticized as in France. As regards the professional personnel, he approves of the method of appointing the members of the house staff, but he fears that political considerations and lay meddling have too much to do with the choice of the higher medical officers. He has even imbibed the idea that in some hospitals the surgeons are subject to change at every presidential election, which, of course, is quite erroneous.

He finds no more difference between the actual surgery of America and that of the chief European countries than exists between the work of one surgeon and that of another in any one country. He seems to approve

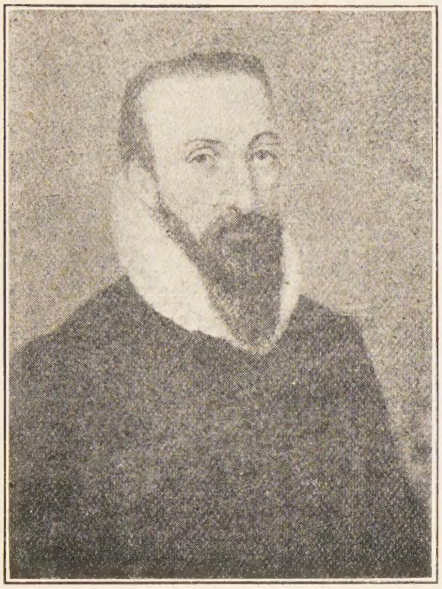
of the celerity with which operative intervention is brought to bear in cases of serious injury, as was exemplified in the treatment of President McKinley, and he appears to have a high opinion of the best of our operative work. In particular he pays a glowing tribute—amply deserved, we may add—to the wonderful work of the Mayo brothers, of Rochester, Minnesota. In conclusion, he expresses the liveliest appreciation of the courtesy shown him by the American surgeons.—*New York Medical Journal.*

William Osler, Professor of Medicine, Oxford University.—It has been but a couple of weeks that we have had to announce the loss to the American profession by retirement of Dr. George Shrady, editor of the *Medical Record*, and a leader of medical thought for almost forty years. Now we have to record the retirement of another leader, probably the foremost authority in clinical medicine in America, Dr. William Osler, professor of medicine to Johns Hopkins University. Dr. Osler has just accepted the appointment to the chair of medicine at Oxford University, and will be known as regius professor of medicine to that institution, succeeding his former teacher, Sir John Burdon Sanderson.

Dr. Osler was born in Tecumseh, Ontario, in 1849, and graduated from McGill University in 1872. His postgraduate education was obtained at Berlin, Vienna and London. Returning to Canada, he was appointed in 1874 to the chair of the institutions of medicine at McGill, which position he held for ten years, resigning to accept the chair of clinical medicine in the University of Pennsylvania in 1884. In 1875 he was elected to the position of pathologist to the Montreal General Hospital, and in 1878 physician and lecturer on clinical medicine in the summer school. He remained at the University of Pennsylvania from 1884 to 1889, when he was appointed to the chair of medicine of the Johns Hopkins University, which position he has since held. In 1885 he was Gladstonian lecturer at the Royal College of Physicians and Surgeons, London; in 1886 Cartwright lecturer to the College of Physicians and Surgeons, New York. He is a fellow of the Royal College of Physicians, London; LL. D., Aberdeen and several American universities.

Probably Dr. Osler will be most gratefully remembered by the medical student and younger practitioner for his magnificent text book on the practice of medicine, the first edition of which appeared in 1892, and on which his principal fame rests. No text book before or since has been able to convey to the beginner the difficult portion of our art in such a clear and simple manner, and to this day the writer, in every knotty problem that presents itself, has first and often final recourse to "Osler." He is at last reaping the reward of his strenuous labors of the past, and what is America's loss is his and England's gain. In offering congratulations to the new regius professor, we can only wish him the success in the future that he has attained in the past. To Sir William Osler, Bart.—*The Cincinnati Lancet Clinic.*

BIOGRAPHICAL SKETCHES.



AMBROISE PARE.

Ambroise Pare, the father of French surgery, was born of poor parents at Laval, province of Maine, in 1510. He began his medical career as apprentice to a barber-surgeon in Paris; studied three years at the Hotel Dieu, and so far obtained the confidence of his teachers that he was sometimes permitted to operate for them. In 1537 Pare was made surgeon to the colonel-general of infantry. After a campaign of three years he returned to Paris and married. In 1543 he was in the army of Perpignan. At the siege of Damvilliers he, for the first time in surgery, made use of ligatures in amputations, doing away with the cautery. In 1554 Pare was made Master of the College of St. Come. From 1559 to the time of his death, in 1590, he was surgeon to the King, serving under Henry II, Francis II, Charles IX and Henry III.

WILLIAM HARVEY.

William Harvey, who first made known the doctrine of the circulation of the blood, was born in Folkstone, Kent, in 1578, and died in London, in 1637. He graduated from the grammar school at Canterbury, and became a pensioner at Caius College, Cambridge, where he took his A. B. degree at nineteen. He then began the study of medicine at Padua, becoming a doctor of medicine in April, 1602, at the age of twenty-four. In the same year he was made a member of the Royal College of Physicians. In 1609 he was elected physician to St. Bartholomew's Hospital; in 1615 he was appointed Lumleian lecturer, and in 1616 he began a course of lectures, the first bringing forward his views on the movements of the heart and blood. Two years later he became Physician Extraordinary to James I, and later Physician in Ordinary to his successor.

COUNTY SOCIETIES IN AFFILIATION WITH THE STATE MEDICAL ASSOCIATION.

COUNTY.	PRESIDENT.	ADDRESS OF PRESIDENT.	SECRETARY.	ADDRESS OF SECRETARY.
Atchison	E. E. Richards	Tarkio	A. McMichael	Rockport.
Audrain	C. T. Vernon	Mexico	C. A. Rothwell	Mexico.
Bates	A. E. Lyle	Butler	E. N. Chastain	Rich Hill.
Boone	R. S. Austin	Halsville	J. M. Fisher	Columbia.
Buchanan	W. T. Elam	St. Joseph	Chas. W. Fassett	St. Joseph.
Butler	Chas. F. Greene	Poplar Bluff	J. J. Norwine	Poplar Bluff.
Caldwell	G. W. Goins	Breckenridge	Tinsley Brown	Hamilton.
Callaway	C. H. Christian	New Bloomfield	M. Yates	Fulton.
Camden	G. M. Moore	Linn Creek	G. T. Myers	Macks Creek.
Carroll	W. C. Baird	Bogard	R. F. Cook	Carrollton.
Cass	H. Jerard	Pleasant Hill	J. S. Triplett	Harrisonville.
Chariton	M. B. Austin	Brunswick	C. A. Jennings	Salisbury.
Clark	H. W. Harris	Winchester	A. C. Bridges	Kahoka.
Clay	L. J. Jones	Linden	F. H. Matthews	Liberty.
Cole	R. E. Young	Jefferson City	G. Ettmueller	Jefferson City.
Crawford	W. A. Metcalf	Steelville	A. H. Horn	Steelville.
Current River	J. A. Chilton	VanBuren	Frank Hyde	Eminence.
Daviess	W. N. Keener	Jamesport	M. A. Smith	Gallatin.
Grundy	J. A. Asher	Trenton	W. D. Fulkerson	Trenton.
Henry	J. M. Miller	Montrose	F. M. Douglas	Clinton.
Holt	J. M. Davis	Craig	W. C. Proud	Oregon.
Howard	P. C. Smith	Fayette	C. W. Watts	Fayette.
Howell	J. C. B. Dixon	West Plains	H. C. Shuttee	West Plains.
Iron	W. R. Gay	Ironton	Ira A. Marshall	Ironton.
Jackson	J. W. Kyger	Kansas City	E. L. Chambliss	Kansas City.
Jasper	R. L. Neff	Joplin	J. D. Pifer	Joplin.
Johnson	J. I. Anderson	Warrensburg	E. H. Gilbert	Warrensburg.
John T. Hogden	M. P. Overholser	Harrisonville	H. H. Rhodes	Foster.
Laclede	J. M. Billings	Lebanon	J. A. McComb	Lebanon.
Linn	G. N. Lantz	Brookfield	D. F. Howard	Brookfield.
Livingston	R. Barney	Chillicothe	H. M. Grace	Chillicothe.
McDonald	E. F. Doty	Anderson	M. L. Sellers	Anderson.
McDowell Dist	John D. Seba	Bland	J. W. Nieweg	Owensville.
Macon	W. E. Webb	Macon	G. B. Rush	Macon.
Maries	O. C. Fritts	Lois	O. N. Schudde	Vienna.
Marion	J. S. Howell	Hannibal	F. Janet Reid	Hannibal.
Miller	J. W. Temple	Eldon	G. D. Walker	Eldon.
Mississippi	A. W. Chapman	Charleston	H. L. Reid	Charleston.
Moniteau	J. B. Stewart	Clarksbury	J. B. Norman	California.
Monroe	G. B. Dysart	Paris	W. B. A. McNutt	Monroe City.
Morgan	J. D. Hubbard	Versailles	J. T. Beale	Versailles.
Nodaway	J. A. Larrabee	Barnard	F. R. Anthony	Maryville.
Pettis	W. C. Overstreet	Sedalia	W. S. Shirk	Sedalia.
Phelps	W. H. Breuer	St. James	S. L. Baysinger	Rolla.
Platte	A. S. Herndon	Camden Point	G. C. Coffey	Platte City.
Putnam	I. F. Noel	Unionville	J. H. Holman	Unionville.
Randolph	J. C. Ridings	Cairo	D. A. Barnhart	Huntsville.
Ray	Jas. W. Smith	Richmond	C. B. Shotwell	Richmond.
Reynolds	J. M. Lowery	Centerville	T. W. Chilton	Corridon.
Saline	D. C. Gore	Marshall	D. F. Bell	Marshall.
St. Clair	W. Cline	Appleton City	E. D. Miles	Osceola.
St. Louis	B. M. Hypes	2005 Victor St	T. A. Hopkins	Century Bldg.
St. Louis Co	R. D. Moore	Central	H. G. Wyer	Kirkwood.
Schuyler	J. T. Jones	Queen City	H. E. Gerwig	Downing.
Scotland	W. E. Alexander	Memphis	O. F. Pile	Memphis.
Shelby	Wm. Carson	Shelbyville	L. W. Dallas	Hunnewell.
Stoddard	T. B. Turnbaugh	Bloomfield	R. D. Corbin	Bloomfield.
Sullivan	J. C. Kissinger	Milan	G. S. Milnes	Milan.

It is believed the information in this table is correct to date of going to press. Officers are requested to notify us of any errors or required changes. For further information concerning any Society, address the Secretary.

MEETINGS OF COUNTY MEDICAL SOCIETIES.

The Secretary of the County Society will please furnish the Secretary of the State Society the dates of the Meetings of his County Society.

COUNTY.	DATE OF MEETING.
Atchison	Quarterly. January, April, July, October.
Audrian	Monthly. First Monday.
Bates	Quarterly. Last Thursday in Feb., May, Aug. and Nov.
Boone	Monthly. First Monday.
Buchanan	Bi-Monthly. First and Third Friday.
Butler	Monthly.
Caldwell	Quarterly. July, October, January, April.
Callaway	Monthly. Second Thursday.
Camden	Quarterly. January, April, July, October.
Carroll	Monthly. Second Tuesday.
Cass	Quarterly. First Tuesday of March, June, Sept., Dec.
Chariton	Monthly. Last Thursday.
Clark	Subject to the call of the President.
Clay	Monthly. Last Monday.
Cole	Quarterly. Second Thursday of Jan., Apr., July, Oct.
Crawford	Monthly.
Current River	Quarterly. August, November, February, May.
Daviess	Monthly.
Grundy	Quarterly. July, October, January, April.
Henry	Monthly. Second Tuesday.
Holt	Monthly.
Howard	Monthly. Third Tuesday.
Howell	First Thursday of January, March May.
Iron	Monthly.
Jackson	Bi-monthly. Second and Fourth Thursday.
Jasper	Bi-monthly. First and Third Mondays.
Johnson	Quarterly. June, September, December, March.
John T. Hodgen	Quarterly. October, January, April, July.
Laclede	Bi-annual. First Mondays May and November.
Linn	Quarterly. October, January, April, July.
Livingston	Monthly. Second Thursday.
McDonald	Monthly. First Wednesday.
McDowell District	Semi-Annually. Fourth Thursday in October.
Macon	Monthly. On or before full moon, Tuesday, 10 a. m.
Maries	Quarterly. First Thursday of Feb., May, Aug., Nov.
Marion	Monthly. First Friday.
Miller	Quarterly. First Thursday. March, June, Sept., Dec.
Mississippi	Monthly. First Monday.
Moniteau	Quarterly. March, June, September, December.
Monroe	Quarterly. First Tuesday of April, July, October, Jan.
Morgan	Quarterly. First Wed. of March, June, Sept., Dec.
Nodaway	Monthly. Second Tuesday.
Pettis	
Phelps	Quarterly. March, June, September, December.
Platte	Monthly. First Wednesday.
Putnam	Monthly. First Wednesday.
Randolph	Monthly.
Ray	Monthly. Third Wednesday.
Reynolds	Quarterly. January, March, June, October.
Saline	Monthly. Second Tuesday.
St. Clair	Quarterly. Second Tues, of March, June, Sept., Dec.
St. Louis	Weekly. Saturdays.
St. Louis County	Bi-monthly. Second and Fourth Wednesday.
Schuyler	Bi-monthly. July and December.
Scotland	Monthly. Second Tuesday.
Shelby	Quarterly. June, September, December, March.
Stoddard	First Wednesday in March, June, Sept. and Dec.
Sullivan	Monthly.

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President: JABEZ N. JACKSON, Kansas City, Mo.

Vice-Presidents:

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Secretary: C. M. NICHOLSON, St. Louis.

Assistant Secretary: E. J. GOODWIN, St. Louis.

Treasurer: J. FRANKLIN WELSH, Salisbury.

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SECOND DISTRICT.—J. B. BRUMMALL, Salisbury. Counties: Linn, Carroll, Chariton, Livingston, Grundy, Sullivan, ***Mercer,*** Putnam.

THIRD DISTRICT.—E. H. MILLER, Fayetteville. Counties: Clay, Ray, Platte, ***Clinton,*** Caldwell, ***DeKalb, Gentry, Harrison, Worth,*** Davies.

FOURTH DISTRICT.—C. H. WALLACE, St. Joseph. Counties: Buchanan, Holt, Atchison, Nodaway, ***Andrew.***

FIFTH DISTRICT.—L. W. DALLAS, Hunnewell. Counties: Macon, Shelby, Marion, Randolph, Monroe, ***Ralls.***

SIXTH DISTRICT.—WOODSON MOSS, Columbia. Counties: Audrain, Callaway, ***Montgomery, Warren, Pike,*** Boone, Howard.

SEVENTH DISTRICT.—W. B. DORSETT, St. Louis. Counties: ***St. Charles,*** St. Louis, ***Lincoln.***

EIGHTH DISTRICT.—F. J. LUTZ, St. Louis. Counties: ***Franklin, Gasconade, Crawford.***

NINTH DISTRICT.—B. M. HYPES, St. Louis. Counties: ***St. Genevieve, Cape Girardeau, Perry.***

TENTH DISTRICT.—J. J. NORWINE, Poplar Bluff. Assistant to Dr. Norwine: Dr. I. A. Marshall, Ironton. Counties: Dr. Norwine—Butler, Mississippi, ***Scott, New Madrid, Bollinger, Dunklin,*** Stoddard, ***Center, Ripley.*** Dr. Higginbotham —***Jefferson, Washington, Francois.*** Dr. Marshall—***Iron,*** Reynolds, ***Wayne, Madison.***

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TWELFTH DISTRICT.—R. D. HAIRE, Clinton. Counties: Pettis, Johnson, ***Lafayette,*** Henry, St. Clair, ***Benton,*** Saline, ***Cooper.***

THIRTEENTH DISTRICT.—M. P. OVERHOLZER, Harrisonville. Counties: Jackson, Cass, Bates.

FOURTEENTH DISTRICT.—A. R. SNYDER, Joplin. Counties: McDonald, ***Berry, Newton,*** Jasper, ***Lawrence, Dade, Barton, Cedar, Vernon.***

FIFTEENTH DISTRICT.—Counties: ***Hickory, Stone, Taney, Greene, Christian, Dallas, Polk.***

SIXTEENTH DISTRICT.—DR. R. L. JOHNSON, Rolla. Counties: Phelps, ***Pulaski,*** Laclede, ***Webster, Ozark, Dent, Texas, Wright, Douglas,*** Howell, ***Oregon.***

Counties in bold face type not yet organized.